DOCUMENT RESUME

ED 353 959 IR 015 918

TITLE	EPIEgram: The Newsletter of Systemic Change, 1991-1992.
INSTITUTION	Educational Products Information Exchange Inst., Hampton Bays, NY.; Sterling Harbor Press, Greenport, NY.
PUB DATE	92
NOTE	120p.; For the 1990-91 issues, see ED 340 354. Until January 1992, subtitled "The Newsletter about Educational Materials and Technology. Issued 9 times a year.
AVAILABLE FROM	Sterling Harbor Press, P.O. Box 28, 146 Sterling Ave., Greenport, NY 11944 ($65 per year).
PUB TYPE	Collected Works - Serials (022) -- Book/Product Reviews (072)
JOURNAL CIT	EPIEgram: The Newsletter of Systemic Change; v18 n1-9 1991-92
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	Audiovisual Aids; Computer Software Evaluation; Copyrights; Curriculum Development; Distance Education; Educational Innovation; *Educational Resources; *Educational Technology; Elementary Secondary Education; Mathematics Curriculum; Parent School Relationship; Readability; Reader Text Relationship; Research and Development; School Business Relationship; School Funds; Sex Fairness; *Systems Approach
IDENTIFIERS	Multimedia Materials; *Systemic Change

ABSTRACT

The EPIEgram newsletter contains information about educational materials and technology and systemic change. In addition to continuing features, "Research & Reports," "Views and Reviews," and "The Educational Software Selector (TESS)," the five issues and two double issues contain articles on textbook adoption; multimedia software evaluation; materials on the quintcentenary of Columbus's voyage; purchasing technology for schools; text content and reading ability; copyright policy and concerns of publishers; funding sources for materials and technology for schools; distance learning; a report on IBM's Schools Executives Conference; parental involvement; ending sexual inequality in schools by systemic change; remodeling the mathematics curriculum; business and education; systems and systemic thinking; systemic vision of H.R. 4014; and the States Consortium for Improving Software Selection (SCISS), the TESS database, and curriculum reform. (ALF)

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EPIEgram:

The Newsletter of Systemic Change

Volume 18, Number 1, 1991 through Number 9, 1992

IR015918

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EPIEgram

The Newsletter About Educational Materials and Technology

Affiliated with EPIE Institute

Volume 18, Number 1, 1991

Schools Gear Up for Columbus

A Wealth of Materials for the Quincentenary

The 500th anniversary of Columbus's first voyage to America will be a time to reexamine the traditional ways we have thought about and taught about Columbus. Though the quincentenary is next October, the media are gearing up this fall for an enormous number of Columbus offerings.

We will be inundated with materials—from a major television series to a groundbreaking Smithsonian exhibit to a *Newsweek* special issue to interactive multimedia software to at least 30 new children's books. These materials will often offer new and controversial views of the explorer and his age.

New research and new attitudes have changed the established perspectives on the voyages of Columbus. Teachers may have to move beyond their textbooks and traditional teaching to encompass a richer treatment of the topic, one that is multicultural and multidimensional. They may need to provide themselves with up-to-date interpretations and accurate information.

Help for Teachers. So where is the teacher to start? The National Council of Social Studies will provide direction. The organization will release a statement on teaching the importance of Columbus's voyages in the October issue of Social Education. The statement will identify areas that traditionally may have been incorrectly taught and will furnish guidelines to improve teaching. Teachers will be directed to a variety of materials through annotated bibliographies. Student materials, many based on the *Seeds of Change* exhibit (see page 2), will also be made available through the NCSS.

Another invaluable guide for orienting teachers to new perspectives on Columbus is *The Voyages of Columbus: A Turning Point in World History*, a publication based on a conference at Ball State University, Teaching About the Voyages of Columbus.

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Where to Begin With Multimedia?

Many Schools Lack Funds, Expertise

Technologically experienced educators with plenty of funding may hail the increasingly sophisticated multimedia programs for education, but many schools—in fact, most schools—can't afford multimedia hardware and software for their classrooms.

What should a school do if it's short on both funds and technological expertise, but still would like to join the multimedia revolution? What should they buy first? We asked some multimedia gurus.

Kathleen Wilson, Director of Multimedia for the Center for Technology at the Bank Street College of Education says: "Schools may worry about buying the right thing, but if they worry too much they may never buy anything." They should remember that most equipment ends up being usable in some way, even when more sophisticated technology overtakes it, she says.

If a school or classroom can buy only one multimedia element, Wilson suggests a videodisc player, even if it's a Level 1 player. Many outstanding educational programs are available that can be used well in that mode, such as *Windows on Science* from Optical Data or the art series on the Louvre from Videodiscovery, says Wilson.

Dr. Paul Schlieve, director of the multimedia program at the Texas Center for Educational Technology, also advises schools to start simply. "Don't go after the whiz-bang stuff first." he says. You must initially identify a platform that you are comfortable with, which might be Apple or IBM or Commodore. You must also identify instructional objectives and existing products that will help you meet those objectives, he advises.

Once you've thought through these issues and

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Schools Gear Up for Columbus

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The booklet contains two essays by noted scholars that are directed to teachers. The first, "Columbus and Ecological Imperialism" by Alfred Crosby, deals with the concept of the Columbian Exchange, which gives an ecological perspective on Columbus's discoveries. The second, "Christopher Columbus: The Hero and the Historian" by Helen Nader focuses on an accurate portrayal of Columbus the man. Primary source material for classroom use is recommended and a bibliography for teachers is included. Also available are lesson plans based on the publication. ERIC Clearinghouse for Social Studies/Social Science Education, Indiana University, 2805 East Tenth Street, Bloomington, Indiana 47405. Phone 812 855-3838.

Two media events will be the focus of much of the study of Columbus during the quincentenary: the television series *Columbus and the Age of Discovery* and the Smithsonian exhibit *Seeds of Change*. Many materials will "spin off" from these two events.

Television. *Columbus and the Age of Discovery*, a seven- part PBS television series, bills itself as an "epic documentary series on Christopher Columbus, his era, and his legacy." It begins Sunday, October 6. Developed by WGBH in Boston, producers of last year's highly-acclaimed *The Civil War*, this series seeks to give the worldwide cultural, scientific, and political implications of the Columbian Exchange. It is concerned to show the Columbus story from multicultural perspectives. Schools have seven-day off-air taping rights, and a videocassette of the series may be purchased. Unfortunately, a 32-page high-school teacher's guide will not be available until next October, when the series will be rebroadcast.

Exhibition. *Seeds of Change*, the largest exhibit ever mounted at the Smithsonian's Museum of Natural History in Washington, D.C., will examine five "seeds"—sugar, corn, the potato, the horse, and disease—and examine how the transfer of these elements between the Old and New Worlds transformed civilization everywhere. Among the objects of the exhibit will be pre-Columbian gold and silver objects, early botanical drawings, Indian and slave artifacts from the Caribbean, and Indian bead work, to mention a few. A version of the exhibit will be seen in six museums and 53 libraries across the country. An estimated 37 million people are expected to view the exhibits.

Interactive Multimedia Software. *Columbus: A Journey to Discovery*, due this month from IBM, will offer 180 instructional hours and will allow students and teachers to branch off and pursue practically unlimited subjects from the time of Columbus—monetary systems, navigation, sciences—and will probe such issues as self-discovery, discoverers as heroes, and much more. Terry Jenkins, a spokesperson for IBM, calls it "unstructured, a nonlinear learning system, a very sophisticated program." The program requires an IBM PS/2 with Linkway, a CD-ROM drive or player, and a videodisc player.

Age of Exploration (tentative title), an interactive multimedia program based on the Columbus television series, is being developed by WGBH and Optical Data, but it will not be ready until next fall.

Textbooks. Two student books have been developed from the *Seeds of Change* exhibit in association with the National Council for Social Studies: for the middle grades, *Seeds of Change: The Story of Cultural Exchange after 1492* and, for high school students, *Seeds of Change, Readings in Cultural Exchange after 1492*. Priced at $9.95 and available from Addison Wesley, the books are designed to be used as replacements for the standard units on discovery and colonization of the Americas.

Trade books. For adults and older students, it's a safe guess that *Columbus and the Age of Discovery*, a lavishly-illustrated volume based on the television series, will hit the top of the bestseller lists.

For children, more than two dozen new Columbus titles will be released over the next year, fiction and nonfiction for every age level. When choosing these new books, look for indications that they are based on the latest research, draw on primary source material, and have a multicultural perspective. The National Council of Social Studies will offer a bibliography of books for young readers.

Magazines. *Science Weekly*, a math and science publication for elementary students, will spotlight scientific aspects of the *Seeds of Change* exhibit in all its issues.

Newsweek is preparing a special Columbus issue in October in collaboration with the *Seeds of Change* exhibit. It will be distributed through *Newsweek's* Classroom Program and to 10,000 educators at conferences nationwide. A teacher's guide will be sent to all school subscribers, and newstand buyers may also get the guide for free by phoning 1-800 526-2595.

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States Agree on Adoption Guidelines

California and Texas To Increase Influence

The content of school science textbooks may in the future be determined by two states.

California and Texas are collaborating to write joint criteria for middle school science textbooks, adoption of which will begin in 1994. The two states may then expand their efforts to include joint guidelines for other grades.

Together California and Texas make up about 20 percent of the textbook market, accounting for $380 million in sales, giving them considerable influence with publishers in preparing the contents of textbooks.

"California and Texas will now amplify their influence on the textbook industry," says P. Kenneth Komoski, Director of EPIE Institute. "However, their curricula are certainly forward-looking and in keeping with the latest thinking about what constitutes good science education, so this can be considered a very positive development."

The science curricula in both states will be based on *Science for all Americans*, the Project 2061 report by the American Association for the Advancement of Science.

Both California and Texas have pressed publishers to develop innovative materials, to move away from traditional approaches. Both states consider for adoption nonbook materials such as software and videodiscs. *Windows on Science*, a videodisc science curriculum that made the Texas adoption list last year, will be in use in 65% of the elementary schools in the state this fall.

Eugenie Scott, Project Director for The National Center for Science Education, sees this joining of forces by California and Texas as a situation in which everyone wins. "I believe other states will welcome this development, because their curricula are moving in the same direction," she said. "And publishers are very pleased; they have wanted to see something like this for a long time."

New Service Links TV News to Textbooks

How do teachers connect the exciting history that tumbles from their television sets every night—the fall of the Berlin Wall, the Gulf War, the dissolution of Communism—with the curriculum-dictated history and social studies that they must cover?

A new electronic service that will correlate late-breaking news to specific social studies and science textbooks may offer much-needed assistance to teachers.

Called Videolink, this electronically-delivered service will connect the news aired on CNN, *The Week in Review*, and *Science and Technology*, from Turner Educational Services, Inc., with the textbooks published by Silver Burdett and Ginn and Prentice Hall. The service will be offered free for one year to schools that adopt the latest versions of the social studies and science textbooks from the two publishers.

Every Monday morning subscribing educators will receive classroom guides directly correlating the week's news to the specific textbooks they are using. The guides will also offer program rundowns, study questions, bibliographical references, and reproducible worksheets.

Will this service expand to include all social studies and science textbooks? Unfortunately, there are no such plans, according to a CNN spokesperson. Educators who would find the service useful might make their feelings known to other textbook publishers and CNN.

Basal Adoption Guide Available

The Center for the Study of Reading at the Univerity of Illinois has published *A Guide To Selecting Basal Reading Programs*, a set of booklets for adoption committees to use in evaluating reading textbooks. The Guide contains the latest research on important aspects of reading instruction and a leader's manual.

The Guide is not intended to support or refute any particular philosophy of reading, according to its authors. Besides focusing the adoption committee's attention on the important issues and research in effective reading instruction, the publication also provides guidelines to use when evaluating content and a procedure to analyze and record committee findings.

A brief selection from the Guide appears on page 4. The complete Guide is priced at $50. Write to: Guide, Center for the Study of Reading, 51 Gerty Drive, Champaign, IL 61820.

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Improving the Adoption Process

The Role of Committee Leaders and Members

(This selection is from A Guide to Selecting Basal Reading Programs *from the Center for the Study for Reading, University of Illinois at Urbana-Champaign. For information about the Guide, see story, page 3).*

Given the problems with the adoption process that have been identified by research, how can the process be made more effective? Experiences with adoption committees, conversations with school administrators concerned with the adoption process, and a review of the literature on adoption suggest some answers. Information from all these sources indicates that improvement begins with sound procedures to guide the organization and operation of the adoption committee. Effective committees have in common strong leadership and informed, interested members.

Committee Leaders

There is no substitute for an effective leader who can keep a committee on task. What follows is a look at some of the things effective leaders must do.

Provide expert advice. While committee leaders do not have to be reading experts, they must have access to someone who is. That person should assist the leader in answering questions committee members might have, and, equally important, in providing information that will upgrade the committee's knowledge about effective reading instruction.

Divide the labor. Because examining and evaluating materials is so time-consuming, leaders should divide the work among subgroups of committee members—sometimes by grade level, sometimes by topic, sometimes by publisher. This avoids the overwhelming task of having every member of the committee examine every topic at every grade level in every set of materials being considered for adoption.

Organize the data. By the time the examination process comes to a close, the subgroups will have compiled a mass of forms and data about the programs they have evaluated. Leaders must find ways to organize and synthesize this information. Leaders are also instrumental in determining how final decisions will be made and in ensuring that the information will be delivered to the administration and the rest of the district.

Make decisions binding. Finally, leaders of textbook adoption committees must see to it that members have the power to make the final selection. When committee members go through a careful evaluation to reach a decision, their decision must not be undermined by 'higher-up' administrators who decide, for whatever reasons, to ignore the committee's decision. It is up to the leader of the committee to make sure that statements of the administration budgetary constraints and any other constraints are explicit. Assuming that committees operate within these constraints, and that their evaluation process is reasonable, their recommendations must be considered as binding. When this does not happen, adoption committees will very quickly lose the motivation to expend time and effort on the adoption process.

Committee Members

Needless to say, the members of an adoption committee must be interested in reading and in research about reading, and willing to give the time and energy necessary to properly examine, evaluate, and select reading programs.

Represent all needs. Committee members should represent a range of grades, years of teaching experience, and points of view about reading instruction. It is very important that the membership of a committee represent the instructional needs of *all* students in a school or district.

Offer their specific expertise. Some researchers recommend that subcommittees should not be based on the usual grade-level divisions, but rather on areas of committee members' expertise or interest, for example, beginning-reading instruction, comprehension instruction, selections in student textbooks, or higher-order thinking skills.

Provide support for their recommendations. In any case, committee members should be able to provide specific evidence from the teacher's manuals, student readers, and workbooks to support their conclusions and recommendations to the entire committee.

Establishing Procedures

Once they are assembled and organized, most adoption committees follow some variation of these tasks: 1) They gather information about reading research and about programs. 2) They establish evaluation criteria. 3) They examine and evaluate programs. 4) They organize their findings. 5) They elect the programs that best match the criteria they established.

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Needed: A 'Critical Lens'

How to Evaluate Multimedia Software

A steady stream of ever more sophisticated interactive multimedia software is becoming available to schools. The software may come with many bells and whistles and high price tags. How can educators evaluate these programs? It may take a while to determine if they indeed serve a particular school's educational goals.

Kathleen Wilson and William Tally of the Center for Technology in Education, Bank Street College of Education, believe there is a need for a "critical lens," a way of thinking about new interactive multimedia programs. They developed what they call a framework for reflecting on the design of discovery-based or interactive multimedia. Based on their review of several major programs, they determined that all these programs have three elements in common: a database of information, a user interface for accessing information, and interactive tools for manipulating the information. In the following article, excerpted from a longer study, they offer ways to think about and judge each of the components of interactive multimedia.

A Database of Information

Depth vs. Breadth. Does the content of the database appear to be focused on one subject area or bounded by a central theme, or is it perhaps comprised of an encyclopedic array of subjects or a potpourri of themes? In other words, does it contain a narrow range of topics presented in a deep way, or a broad range of topics presented in an introductory way, or some combination of both?

Media Formats. Does the database contain information presented in a variety of media formats: text, still images, moving images, sounds, and graphics? Does any one of these formats, such as motion video or text, predominate? Are the different media integrated in interesting ways, or are they used more or less discretely? Multimedia, by definition, means a variety of media formats. Some programs, however, integrate the media with a purpose.

Realism. Is the content of the database perceived to be "realistic," perhaps because it is based, at least in part, on photographically realistic films and videotapes, such as news clips, or "live" sound recordings of people, places, and things? Or perhaps, does it appear to be close to "real life" in its content in another way, by containing, for example, portrayals of current or historical human dilemmas or even situations common to everyday life?

Point of View. Is the content biased in some way? Or, does it attempt to include information from multiple perspectives and disciplines? Does it include multiple and contrasting ways of looking at and thinking about things? Is it emotional in some way, or strictly factual?

Connection to Curricula. Is the content of the database explicitly tied to any particular curriculum or grade level? Or is it perhaps multidisciplinary and appropriate for a variety of age and skill levels, with more flexible connections to a variety of curricula?

Nature of the Raw Materials. What is the basis for the particular compilation of information in the database? How did it originate? For example, is it based on an existing film archive, or on a particular documentary, film, drama, or book? Is it a customized collection of information acquired from a variety of sources, or a collection of new materials created explicitly for the database? Was it compiled with a particular philosophical or pedagogical ideal in mind? A particular learning goal? Some combination of these?

Browsing vs. Direct Searching and Sorting. Is the structure of the database designed so that novices, as well as other users, can browse in an exploratory way? Or is it structured so that, with some knowledge in hand, users can enter key words or phrases to search directly and quickly through the database to specific pieces of information? Or some combination of both?

Use of Contextual Metaphors and Organizers. Is a global metaphor used to help organize the information and contextualize the experience for users? Is it based on familiar environments or activities? Is the database structured around a particular space or place, or around the narrative elements of theme, place, character, conflict and/or plot sequence associated with a particular story? Or, does its structure draw from creating the illusion of the functional conventions associated with using and navigating through a familiar environment, such as a library, cafeteria, or city street? Or using some familiar object, such as a camera, telephone, or ruler? Or some combination of these?

Structured Activities. Does the database help the user learn the information contained in it, and provide

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Needed: A 'Critical' Lens

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springboards for association, reflection, and insight? For example, are provocative study questions provided? Puzzles to solve? Role-playing activities? Experiments that involve the manipulation of variables, images, sounds, words, or data? Is feedback of progress or "success" provided to users who pursue these activities?

User Interface for Accessing Information

Contextualizing Overview. Does the interface include an introductory overview of some sort that describes the nature of the multimedia application, what information it contains, and how to use it?

Locational Information. Does the interface always make information available to users about where they are in the database, so that they never feel "lost?" Locational information might be in the form of maps, indexes, backtracking information, labels, highlights, you-are-here arrows, and so on.

Visual or Spatial Access. Does the interface provide familiar images and/or spaces as navigational cues and menus to information? Visual or spatial access might be provided in the form of maps, timelines, pictures, charts, pictographic icons, simulated three-dimensional spaces, and so on, in addition to, or in place of, menus based on words, or lists of words, only.

Multiple Options. Does the interface provide multiple options to users for navigating through, accessing, and displaying the information in the database? Are there multiple levels of information content? Multiple media formats used? Multiple levels of experience—concrete, experiential, visual, and abstract? Multiple navigational decision points and pathways?

System Responsiveness and Consistency. Does the interface include conventions that provide users with quick, explicit responses to their inputs that operate in a consistent way? These might include auditory, visual, and/or text-based responses. Does it allow for any action that has been done to be undone? Is there a way to get help?

Interactive Tools for Manipulating the Information

Personalizing. Are tools provided that allow users to manipulate the information in the database in a way that is meaningful to them? For example, can users "bookmark" information that is interesting to them? Can they store it somewhere and label it for later retrieval? Can they take notes that are preserved on the system? Can they print out information or images?

Searching, Sorting, and Browsing Tools. Are different modes of browsing the database provided? Do these allow for specific key-word searches, as well as more relational modes of sorting?

Linking and Tracing. Are tools provided that allow users to connect previously disconnected pieces of information together, to annotate these links, and trace back through the links?

Editing and Authoring. Are tools provided that allow users to edit the video, audio, and text information in the database, reconstruct it, create new juxtapositions, enter new text, and thereby produce multimedia "reports" or presentations (based largely on the rearrangement of information in the database)?

Producing, Composing, Programming. Are tools provided that allow users to input new information (scanned images, digitized sound, graphics, text) to create their own, original multimedia "productions," such as motion video sequences with accompanying text and audio narration?

We hope educators can use these questions to better understand and evaluate multimedia materials. It's important to remember, however, that this is not a list of features that are absolutely necessary for a piece of multimedia software to be considered effective. Rather, the questions are intended to help educators think more critically about multimedia programs and thereby begin to choose more selectively materials appropriate to their particular learning and teaching needs.

Bank Street Offers Publications

The Center for Technology in Education at the Bank Street College of Education has been in the forefront of research and development for educational multimedia software.

Among the outstanding multimedia programs to result from their work are *Palenque* and *The Voyage of Mimi*.

The Bank Street Bookstore offers a variety of publications based on the research into multimedia at the Center. For a listing of their publications write: The Bank Street Bookstore, 2875 Broadway, New York, NY 10025. Phone 212/678-1654.

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New Multimedia Array for Fall

IBM Offers Sophisticated Series

The development of exciting new multimedia software for education continues, and this year will bring both innovative new programs as well as continued enhancement of some fine existing series.

IBM's soon-to-be-announced series *Illuminated Books and Manuscripts* will "knock your socks off," according to Dr. Paul Schlieve, Texas Center for Educational Technology. The series will take a single literary work and link it to the interdisciplinary world of art, science, history and the human condition.

According to Schlieve, these programs "will define what the computer can do educationally." The first in the series is the poem "Ulysses" by Alfred, Lord Tennyson. The program will allow the user to examine the poem, the life of Tennyson, the history and development of poetic forms, and critical interpretations. With the click of a mouse it will move into related subject areas such as Greek mythology, classical civilization, and the concept of Ulysses as a hero.

Other titles in the series will include *Hamlet*, the *Declaration of Independence*, Martin Luther King's *Letter from a Birmingham Jail*, and *Black Elk Speaks*.

According to IBM spokesperson Terry Jenkins, the programs are nongraded, that is, they may be used at a variety of educational levels. "These are not bubblegum," said Jenkins. "They are substantial offerings."

The programs will require and IBM PS/2 with LinkWay, a videodisc player and a CD-ROM drive or player.

Fans of Scholastic's *Interactive Nova Animal Pathfinders* will welcome a new title in that series, *Race to Save the Planet*, due in November. Based on the 10-part, Emmy-award-winning television series, the program gives students in middle grades and high school a comprehensive look at ecological issues. It includes an innovative game in which the user is president of an apple juice company and must make decisions about using alar, packaging, pesticides, and other ecological issues.

The programs require a Mac Plus SE or II with 20 MB hard drive, a videodisc player, and color video monitor.

If your hardware capabilities are not that sophisticated, there are other multimedia programs that will enliven your classroom. *The Second Voyage of the Mimi*, developed by the Bank Street College of Education and distributed by Wings for Learning, requires only a VCR and an Apple II computer. The program, a follow-up to the highly- acclaimed *Voyage of the Mimi*, continues the adventures aboard the ship Mimi, exploring important concepts in math and science, including working with the Maya number system, the Maya calendar, and Mayan culture past and present.

The Discovery Interactive Library, a new series from Discovery Television, has announced its first three titles: *Investigating History: Treasures from the Deep*, Investigating Science: Treasures from the Deep, and *Insects: Little Giants of the Earth*. Three to six additional titles will be introduced later this year. The programs may be used with a Level 1 or Level 3 videodisc player.

The Merchandising of Carmen Sandiego

An educational computing character has become a media superstar. She now has her own television program, a series of books about her, and her likeness on a wrist watch. So far, there's not an exercise video.

Teachers who know and love the Carmen Sandiego computer software series, which has sold over two million units and won over 30 awards, are hoping that the educational purposes that Carmen served so well will not be lost in all the glamour.

First, the new Carmen software. *Where in America's Past Is Carmen Sandiego?* has 400 years of American history as its territory and comes with a 1300-page encyclopedia of American culture and history. The program covers science, art, music, folkways, religion, fashion and many other topics, as Carmen and her henchpersons wreak havoc with America's past.

The television show, based on the first of the Carmen software programs, *Where in the World is Carmen Sandiego?*, will premiere this fall on PBS. Developed by WGBH in Boston and WQED in Pittsburgh, it will aim to promote geographical literacy among its preteen audience. Contestants will have to decipher geographical and cultural clues, some of which will be provided by celebrity guests such as Walter Cronkite and Debbie Gibson.

A series of six Carmen books and two puzzles are now available from Western Publishing Company. With the video game coming this fall, can a movie deal be far behind?

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TESS Takes Texas

Database Installed in Every School

EPIE Institute's *TESS* database, a searchable, electronic version of *The Educational Software Selector*, containing descriptive and evaluative information about some 11,000 educational software programs, is being installed in 6200 schools in Texas.

Texas is the newest member of the States' Consortium for the Improvement of Software Selection, a growing number of states that are licensing the TESS database for use by all educational institutions statewide.

According to Nancy Vaughan, Divisional Director of Technical Development at the Texas Education Agency, which is the Consortium's licensee in Texas, the database will be made available in a number of ways: on the statewide network, on disks, or in print. She believes most schools will want to have their own version on disks. The Education Service Centers throughout the state will work with individual schools on installation and training. "The situation is fluid right now," says Vaughan. "We are in the process of working out the most effective arrangements between the schools and the Service Centers."

Vaughan says it is up to individual schools to decide how to use the *TESS* database. Probably the computer coordinator or media center director in each school will be trained by the Service Center; he or she in turn may train others in the school. Schools may station the database, which requires a dedicated computer, anywhere they want, but Vaughan believes it will usually be installed in the library.

Membership in the States' Consortium entitles every educational institution in a state to install the database. John D'Angelo, Texas Center for Educational Technology at the University of Texas, is integrating *TESS* into the University's teacher training program.

"Part of the curriculum for teacher training involves exposing students to educational software and helping them to evaluate it," says D'Angelo. "*TESS* gives students the opportunity to do this in a very systematic way."

TESS is available in the Education Department on a network that students can access. Students may be given an assignment to look at software at their grade level in a particular subject area. "They may find several hundred programs," says D'Angelo, "but *TESS* can help them to narrow down the list of appropriate programs to a manageable number."

"There's lots of hardware in schools, but that's only half the story," says D'Angelo. "Unless teachers can find the software they need and integrate it into the curriculum, the hardware will remain on the shelves."

Print TESS Now Ready

A print version of the *TESS* database is now available from EPIE Institute. *The Latest and the Best of TESS, 1991-2 Edition* is a reference guide to some 3000 recent and most highly-rated software programs. EPIE editors have culled from the complete database those programs that have had a large number of positive evaluations in respected review sources as well as those programs published most recently. The book provides complete descriptions of the programs and their ratings.

An important feature of the 400-page volume is a section of summary descriptions of the seven major integrated learning systems, based on a major in-depth study of them by EPIE.

The book retails for $49.95 and may be ordered from EPIE Institute, Hamlet Green, 103-3 West Montauk Highway, Hampton Bays, NY 11946.

New Student Journal Publishes Science Papers

A new publication, *The Journal of High School Science Research*, has been established to provide an outlet for research by high school students.

Among the aims of the journal are to recognize research by pre-college age students, to encourage research projects, to provide teachers with a resource for helping young researchers, and to encourage students to share their ideas with their peers.

The *Journal* is published twice a year and will accept papers in a variety of areas, from aerospace science to microbiology to computers. Recent articles have included: "How Elastic Is a Running Shoe?," "Barnacles: Inhibiting Their Growth," and "A Study of the Use of Photosynthesizing Organisms in Martian Ecosynthesis."

For author guidelines write: Applied Educational Technology, P.O. Box 193, Tigerville, SC 29688.

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Research & Reports

TV News Has Little Impact in Classrooms; Libraries Spend $7.46 Per Student

School television news programs have a limited impact on high school students' knowledge of current events. This was one of the findings of a study "Tuning in on Current Events" from the Southeastern Educational Improvement Laboratory. High school students in Mississippi and North Carolina who watched either *Channel One* or *CNN Newsroom* knew little more about world events than students who did not watch the news programs. The authors attribute the failure of children to learn from news programs to the fact that teachers do not integrate news programs into the school curriculum. Students in classes where the news programs were integrated into class lessons retained more data. (See *EPIEgram*, Volume 17, No. 5.) Other findings of the study:

- Students who read newspapers learn twice as much about current events as those whose news source is television.
- Students believe that products advertised in schools (*Channel One* includes commercials) are good for them.
- Teachers seldom used commercials as a means of teaching critical viewing skills.

The average annual budget for school library purchases of children's books is $5573. The average number of students served by school libraries is 747, putting the average spent per student at $7.46. Most school libraries (72.4%) carry children's magazines, with an average of 18 titles. Over 50% of school libraries carry audiotapes for children, with an average school spending $312.40 annually. These figures are from a *Publishers Weekly* survey.

Delegates to the White House Conference on Library and Information Services adopted 100 recommendations, including the following for school libraries:

- Establish an office within the U.S. Department of Education responsible for providing leadership to school library media programs.
- Create federal legislation to provide demonstration grants to schools for library media specialists.
- Establish grants to provide information technology to school media centers.
- Require categorical aid for school media services and resources in any federal legislation that provides funds for educational purposes.
- Establish a nationwide resource-sharing network that includes school library media programs as equal partners and insures that all children have equal access to library resources.

Math teachers rely heavily on textbooks and worksheets, according to a recently-released report, *The State of Mathematics Achievement*, the result of the national study of math performance of fourth, eighth, and twelfth graders from the National Assessment of Educational Progress. Other findings:

- Sixty-four percent of fourth graders and 71% of eighth graders are required to work problems from textbooks every day.
- Seventy percent of eighth and twelfth graders said they never did reports or math projects.
- Innovative teaching strategies were limited. Computers were seldom used in math classes, with teachers reporting difficulty in getting access to them.
- Computers were used most frequently in fourth grade, with 49% of students reporting utilizing them at least once a week. But in eighth grade, only 18% of students used computers once a week, while 52% never used computers at all.
- Three percent of fourth graders and 19% of eighth graders were permitted unrestricted use of calculators in math classes.
- Resources for math classes were reported to be in short supply.

Reviewing 15 years of research on the effectiveness of computers for teaching secondary math ("Effectiveness of the Computer in the Teaching of Secondary School Mathematics: Fifteen Years of Reviews of Research" in *Educational Technology*), author J. Phillip Bennett concluded:

- Using a computer *as a supplement* to regular instruction increases student achievement.
- However, using a computer *as a substitute* for regular instruction is questionable, especially compared to using it as a supplement.

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Research & Reports

- While all types of computer-assisted instruction are effective for secondary mathematics, tutorials seem to have the greatest positive effect.
- Little consistent evidence indicates that teaching computer programming, using computer-assisted instruction, or teaching LOGO improves student's problem-solving ability. Computers might, however, be effective when used as one of a variety of techniques to teach complex problem-solving skills.

How does your school compare with others, technologically speaking? A new survey of about half the schools in the country, "Education and Technology," from Market Data Retrieval, Shelton, CT., finds:

- 19% use videodiscs;
- 11% use integrated learning systems, with the most popular being Jostens, CCC, and WICAT;
- 22% of schools use local area networks, with Apple Talk and Novell the most prevalent;
- only 9% of schools have satellite dishes, the prevailing technology for distance learning; and
- 61% of schools use cable television, with the most popular channels being CNN, The Discovery Channel, and PBS.

In a decade-long study of the poor performance of American children in mathematics as compared to children in Taiwan and Japan, the role of textbooks was one of many issues examined. Reported in *Making the Grade in Mathematics: Elementary School Mathematics in the U.S., Taiwan, and Japan* by H. Stevenson, M. Lummis, S. Lee and J. Stigler, the findings include:

- The content of American, Chinese, and Japanese elementary mathematics textbooks did not differ greatly in terms of number of concepts covered, but there were important differences in how textbooks were used.
- In Taiwan and Japan, strict guidelines in textbooks define what skills and concepts must be taught and when. The guidelines, along with a universal curriculum, a longer school year, more homework, and more hours devoted to math, enable teachers in Taiwan and Japan to cover more material than American teachers.
- The sheer size of American textbooks impedes comprehensive coverage of their contents. Students in Taiwan and Japan use shorter, smaller, paperback books and they are expected to master the entire contents of one of these texts in a semester. In American schools, not all the material is covered during the school year.
- Writers of Japanese and Chinese textbooks do not rely on repetition and review, but assume that every child learns a concept at the time it is first taught.
- American textbooks offer excessive illustration and explanation, so that they do not require the active engagement of teachers, who simply have to follow the textbook. The less explicit Chinese and Japanese textbooks assume that teachers elucidate and elaborate the content of the textbook, with discussions and creative examples.
- American textbooks tend to introduce sophisticated concepts in a simplistic, abbreviated way.
- American students are given more practice in estimation. More emphasis is placed on accuracy in Taiwan and Japan.

The country's largest elementary and high school textbook publisher in terms of sales volume is Macmillan/McGraw School Publishing. Long-established publishing companies that in recent years have been subsumed under the Macmillan/McGraw umbrella include the Random House school division, Science Research Associates, CTB, Barnell-Loft, and Merrill. The second largest school textbook publisher is Simon and Schuster, owner of Prentice Hall and Silver Burdett and Ginn. Harcourt Brace Jovanovich takes third place, with Scholastic in fourth and Houghton Mifflin in fifth. The publishers were ranked by *Educational Marketer*.

EPIEgram

Affiliated with EPIE Institute

EPIEgram is published in cooperation with EPIE Institute by Sterling Harbor Press, P. O. Box 28, 146 Sterling Avenue, Greenport, New York 11944. Subscription rate for 9 issues a year (October through June) is $65. Additional subscriptions to the same address are $25.

Joanne Dolinar and Earl Fultz, Publishers
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Where to Begin With Multimedia?

Continued from page 1

have your basic computer, he too believes that a videodisc player would be a safe bet, as would a CD-ROM player. Educators have found the electronic encyclopedias on CD-ROM particularly useful.

He also suggests that if you are buying equipment piece by piece, you should buy from a single vendor or use the advice of a professional systems integrator. They will help you work out purchases that, in the long run, will all work together.

Fred D'Ignazio, president of Multimedia Classrooms, Inc., takes another tack. He is an advocate of "scavenged multimedia" and he has worked with thousands of teachers to show them how to create inexpensive workstations where students can learn in collaborative, creative ways.

One of his scavenged workstations might consist of an old Apple II with a mouse, a cart with a VCR, and an a/v table purchased for $5 at Radio Shack. Using a videotape, the student can record what's on the computer screen. By adding an old cassette tape recorder an audio track can be created. With a $5 microphone and $5 headphones from Radio Shack, the user is now ready to add music or voice to a computer desktop creation. "With these workstations, students create alphabet books, video science projects, and multimedia term papers. It's an easy, quick, and cheap way to participate in the multimedia revolution."

D'Ignazio, in fact, does not consider these scavenged workstations to be "second best" to elaborate, expensive hardware and software. "Many of the expensive systems are little more than souped-up electronic textbooks that create super couch potatoes."

Educators who feel their school has been left out of the multimedia revolution should keep in mind that they don't have to start with a huge investment. They can also take comfort from knowing that they are not alone. Despite the multimedia brouhaha, in fact only 19% of schools have videodisc players and fewer than that have CD-ROM players. And while there is little doubt that multimedia's future effect on education will be profound, many individual schools are still struggling to take their first tentative steps.

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EPIEgram

The Newsletter About Educational Materials and Technology

Affiliated with EPIE Institute

Volume 16, Number 2, 1991

For Teachers, A High-Tech Center

Technology Must Be Convenient to Use

by Terrel H. Bell and Donna L. Elmquist

Teachers will incorporate technology into their instruction when they do not have to overcome logistical problems.

Many teachers now would use technology more if they had easy access to it. As schools become technologically updated, and as teachers and administrators begin to understand the full potential of technology, the primary media of instruction will no longer be textbooks, but interactive software programs utilizing expert systems and relational database technology.

To facilitate learning through technology, each teacher should have an electronic teaching center in the classroom. Such a center would give the teacher immediate, flexible access to the latest educational technology.

The center will replace the teacher's traditional desk. Therefore, it will have a work surface for paper and books along with drawers and storage for the teacher's usual material and personal items.

The heart of this center will be a central computer connected to the computers used by students. The teacher should be able to call up student achievement data on the color monitor. The teaching center also needs to be able to help the teacher create materials and to have printing capabilities.

The central computer will be connected to a local area network that reaches

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Text Content Must Match Reader

Most Textbooks Serve Average Students Best

by Jeanne S. Chall and Sue S. Conrad

Should Textbooks Challenge Students? The Case for Easier or Harder Books *by Jeanne S. Chall and Sue S. Conrad with Susan Harris-Sharples is based on a study of textbooks that began in 1980 and concluded in 1989. The authors were concerned with the influence of textbooks on students' learning of content and their reading development over time. More specifically, they were interested in aspects of text that contribute to the ease or difficulty of understanding what is read. Some of the conclusions of their research appear in the excerpt below.*

It has become popular to say that textbooks are suitable if they are interesting and contain high-quality writing, and that it matters little how difficult they are. While quality of writing and interesting content have always been considered important in the development and selection of textbooks, it should be noted that we know little about their influence on learning from text. They have been and still remain difficult to assess with any degree of objectivity. Suitable difficulty, on the other hand, is a potent factor in learning from text, and it is relatively easy to measure objectively.

Whether the textbooks students are using are too easy or too hard depends on the content of the textbooks, the grade for which they were developed, and the reading abilities of students using them.

Overall, our study found that the reading textbooks used by most students were the easiest—less difficult than the social studies and science textbooks, grade for grade. . . . Yet we found that reading textbooks, which presented the least challenge to the students, received the greatest amount of instructional time and emphasis. The harder social studies and science textbooks used in the elementary grades received about half the instructional time devoted to the reading textbooks. . . .

Most students could comprehend adequately texts that were on their reading level and below, as well as those that were one to two grades above their tested reading ability. This was true for students who could read on grade level and above.

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HOTS Stuff For At-Risk Students

They Don't Understand 'Understanding'

The major learning problem for at-risk students is that they do not understand 'understanding.' These students do not know how to deal with symbolic concepts (text or number symbols) that are taught in school.

This insight is the basis of a widely-hailed program for using computers with at-risk students to develop higher order thinking skills. Called HOTS (Higher Order Thinking Skills), the program was founded by Dr. Stanley Pogrow of the University of Arizona and a description of his methods, presented in part in *EPIEgram* several years ago, is now available in a new book from Scholastic.

"What happens when you reteach content to students who do not understand understanding? You reinforce their naive beliefs from earlier grade levels that they should view what they learn as separate pieces of information," says Pogrow.

Technology, rather than remediating the learning problem, can exacerbate it. Drill and practice, which is often used with at-risk students, does not stimulate the development of linkages and may even promote the maintenance of a large series of concepts in separate nodes as unconnected facts.

The HOTS curriculum was developed to cultivate general thinking skills. Relying heavily on computers, the program eschews drill and practice and concentrates on using software to develop students' capacity to see parallels between one learning situation and another.

Details about implementing the program, which was validated by the National Diffusion Network, are given in the book, titled *HOTS: Using Computers to Develop Thinking Skills in Students at Risk*. The program is not a quick fix; it requires 35 minutes a day of very sophisticated thinking over two years.

"Once the understanding deficit of students who are at risk is overcome, the students reveal themselves to be high-ability, highly-motivated learners," writes Pogrow.

For Teachers, A High-Tech Center

Continued from page 1

the entire school and the school district. Then the teacher can make reports, order materials and supplies, retrieve information about students, and meet other reporting and communication requirements.

The central computer also will be able to connect with a national satellite, fiber optic, or cable networks so teachers can order and receive special videos or newscasts, and communicate with the world outside the school. It should be capable of interconnecting with a wide array of electronic teaching and information systems, such as video cassette, laser video disk, and other audio-visual equipment.

The teaching center will include a large screen so the teacher can use it to instruct and inform small groups or the entire class. This could include video presentations, typical overhead projector illustrations, laser video, maps, photos, and other image displays on the screen.

The teaching center should facilitate communications between parents and teachers by minimizing time and effort. It should include a telephone with a modem, a speaker, and an answering machine that can take calls when the teacher is busy with students. The answering machine should be capable of playing individualized messages to parents when they dial a student's code number.

The entire center needs to be designed with as much self- teaching capacity as possible, so teachers can easily master its use. It should have switching capability, so that it can be used flexibly from one function to another, without excessive demands on a busy teacher's time.

The center should be designed to be as trouble free as possible. Provisions should be made so that when repairs are needed, a temporary unit can be plugged in while the disabled item is being repaired. Parts and components must be readily available so there will not be long delays while new parts are on order.

There should be no misunderstanding that the purpose of this technology is to liberate teachers so they can increase their personal interaction with students. The purpose of computers and other technological marvels is not to try to replace the teachers but to free them to do what they do best—teach.

From *How To Shape Up Our Nation's Schools: Three Crucial Steps for Renewing American Education* by Terrel H. Bell and Donna L. Elmquist. Available from: Terrel Bell and Associates, Suite 311, Boston Building, Nine Exchange Place, Salt Lake City, Utah 84111. Phone: 801 521-8041.

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Schools Need Copyright Policy

Groups Take Legal Action Against Educational Institutions

If your school does not have a copyright policy, it may be time to establish one. Three trade organizations representing publishers and producers have recently taken separate legal actions against educational institutions which have reproduced media without authorization.

The Association for Information Media and Equipment (AIME), an association of video producers, has filed cease and desist actions against school districts. A California district that participated in a large-scale duplication of videos was required to destroy all videos it did not own, to conduct a workshop for staff about copyright, establish a copyright policy, and to discipline those responsible for the illegal acts.

Book publishers are also taking a strong stand against unauthorized copying. The Association of American Publishers recently won a judgment of $510,000 plus attorneys fees in a lawsuit against Kinko Copying Services, a copy shop that specializes in reproducing print materials for college courses.

"We consider unauthorized copying of books a very serious offense, and schools would do well to pay attention to copyright regulations," said Carol Rishler of the Association of American Publishers. "It's not that you can't copy, but you must get permission to copy."

On the software front, the Software Publishers of America have never filed suit against K-12 schools but they recently filed the first infringement suit against a higher education organization, resulting in the University of Oregon having to pay $130,000 in damages.

The Software Publishers Association does investigate reports of unauthorized duplication of software. While they hope to achieve compliance with the copyright law through educating the schools in the proper use, they will take legal action if appropriate, said Jodi Morrison, litigation assistant.

All three of these organizations offer literature to schools on compliance with the copyright law. Schools may obtain more information by writing to:

AIME, P.O. Box 865, Elkader, Iowa 52043.

Association of American Publishers, 1718 Connecticut Avenue, NW, Suite 700, Washington, DC 20009.

Software Publishers of America, 1730 M Street NW, Suite 700, Washington, DC 20036.

Software Club Enters Second Year

Expects to Double Membership

The Scholastic Software Club may have a long way to go before it catches up with its well-entrenched sisters, the Scholastic Book Clubs, but the organization has made big strides in its first year of operation.

As Scholastic Software Club moves into its second year, it expects to double its circulation and will be in 15,000 to 25,000 schools, according to Manager Mark Stoller.

The consistent bestseller in the club's first year was *Superprint*, a graphics package from Scholastic that can be used by students from K-12. The best single offering was *Operation Frog*, a program that simulates a frog dissection. Other bestsellers were Scholastic's *Math Shop*, *Bank Street Writer*, and tool programs such as *Success With Typing* and *PSS Write*. While TV game show software such as *Jeopardy* and *Wheel of Fortune* was popular, the entertainment software did not outpull the educational, perhaps a surprising finding given that students purchase the programs for home use.

"Teachers tell us that students tend to order those programs that they have experience using in school. They seem to feel more comfortable with them," said Stollar.

Last year Apple II software outsold MS-DOS slightly where both versions were offered, but so far this year MS-DOS is performing better, says Stoller. In fact, this year Macintosh sales are keeping pace with Apple II sales.

The club will increase the variety of its selections this year. In addition to software, it will feature one video and one Nintendo game each month. "If these new offerings are successful, we will expand on them," said Stollar.

Stoller has high expectations this year for *Oregon Trail* and *Number Munchers* (both MECC) as well as for *The Writing and Publishing Center* (The Learning Company).

The Software Club is aimed at grades four to nine, though there are selections for both older and younger students. Like the bookclubs, the software club offers discounts off the list price and bonus coupons for teachers which are redeemable for software.

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Publishers Consider Electronic Book

Will Deliver Information Via Smartcard

A proposal for producing and distributing electronic books is making the rounds of New York textbook and trade book publishers. If the proposed electronic book—or something similar to it— comes into being, it could revolutionize the way all books are published and sold and may eliminate the distinction between print and software.

Conceived by former Time executive Nathaniel Lande, a prototype of the proposed electronic book is now being developed by the Bleck Design Group of Chelmsford, Mass. While that group is not providing precise specifications, they say that all of the technology for the proposed electronic book now exists and a prototype will be ready in a few months.

This may be the scenario for book publishing and book reading in the future:

Books would be published in electronic formats. Readers would access books through the use of a Smartcard, a memory card the size of a credit card. The user would insert the Smartcard into a vending machine-like unit called a Bookbank, which would be available in bookstores, schools, and libraries. When inserted, the Smartcard would be digitized with the user's book of choice.

Readers would be able to select from thousands of books in the Bookbank: bestsellers, reference works, children's books, textbooks, or magazines. The books could be interactive, with, for instance, travel guides that plot a route or children's books that read a story.

Once the user's card is digitized with the book of choice, he or she will be charged for it and the author will be credited with royalties electronically.

The reader will then insert the Smartcard in a very lightweight portable computer—weighing not more than two pounds—that resembles a book. It will have an 8" x 10" screen. The reader will be able to adjust the type size up or down.

Pages will turn pages backwards and forwards by buttons. A search window will identify chapter headings, and the system will have a capacity for color graphics and a sound option. Readers will be able to plug it into their printers if they wish to copy part of it. The "book" would cost about $250 and the Smartcard could cost as little as $5.00.

Does it sound too futuristic? The developers say it could be on the market in 12 to 18 months. They are looking to publishers for support of the project.

And while publishers are not known for their embrace of technology, the electronic book could solve many of the problems that have plagued the industry: inventory control, distribution, and accounting. No book would ever have to go out of print, and books could be much more easily kept up to date.

Whether or not this particular project gets off the ground, electronic books are probably inevitable in the next decade. The Japanese are developing standards for the technology. Every book in the Library of Congress is being digitized with the view that the 'virtual library' of the future will be accessible on-line to everyone. Whatever form it takes, the electronic book will bring many changes in the way educators think about materials for teaching and learning.

TV Program to Teach Viewing Skills

A television program aimed at teaching critical viewing skills to children will be presented on Nickelodeon, the children's cable channel, this month. "It's Only Television," produced by noted newscaster Linda Ellerbee, will aim to teach children how television works and how it differs from real life.

Clips of popular situation comedies will be shown, followed by a discussion with a group of children in the studio about whether television solves problems realistically. A behind-the-scenes look at the making of "Brooklyn Bridge," a popular new series about growing up in Brooklyn in the 1950s will be shown.

How a news story is put on the air will be explained, demonstrating how changing a camera angle or the choice of a sound bite can alter the message of a story.

The half-hour program will be shown November 6 at 5 p.m., November 8 at 7 p.m., November 11-14 at 6:30 a.m., and November 18 to 21 at 6:30 a.m.

Schools may tape the program for use in the classroom during school hours and it may be kept for six months, after which it must be erased.

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Publishers Offer New Geography Software

Wide Range of Programs Available

A wide range of engaging new geography software is appearing on publishers' lists this year. Here are some of the latest and the best programs.

BushBuck Charms, Viking Ships, & Dodo Eggs: A Global Scavenger Hunt. This program is in the format of an world-wide electronic scavenger hunt for cultural artifacts set in the year 2010. Players are given a list of items to find—from a banana-shaped postage stamp to a box of lava rocks. The student must outwit the slimy Otto von Slinkenrat, who wants to acquire these items for his collection. With airline tickets to any of 206 cities, students will encounter bad weather and treachery as they learn about diverse countries and cultures. From PC Globe, Inc. IBM PC, XT, AT, PS/2 or compatibles. $49.95. Grades 8-12.

Nigel's World: Adventures in Geography. This program presents a Scotsman who travels around the world snapping photographs of people, animals, and landmarks, in an effort to capture the prestigious Diamond Tripod Award. Using odd means of transportation—from a railroad handcar to a single-engine plane—Nigel, and the players who direct him, learn about each country he visits. When Nigel snaps a picture, a digitized photograph appears on screen. The program includes digitized sounds, animated characters, and folk songs, maps, and 1000 interesting facts about the countries. Lawrence Productions. MS-DOS now available, Macintosh to follow soon. $49.95. Grades 2-7.

Planetary Manager. Coming this winter from National Geographic, this new videodisc and software package is part of the GTV series, the first title of which is the widely-hailed *GTV: Geographic Perspective on American History*. *Planetary Manager* offers hundreds of film clips, still photos and maps, with narrative and music, organized into short videos, on global warming, earth's resources, imperiled water resources, deforestation, and other environmental subjects. The videos can be accessed in any order and at any pace, and students can create custom video presentations. Available for Macintosh in January; IBM in March; and Apple IIgs in Fall, 1992. Price: $650. Introductory price $595. Grades 5 to 12.

The Picture Atlas of Our World. This CD-ROM multimedia product from National Geographic contains geographic, demographic, and statistical facts about every nation in the world, along with audio and video clips that introduce the language and cultural traditions of each country. A glossary of geographic terms is linked to a photographic database. There are interactive political, topographic, regional, and continental maps. IBM using Linkway. $99. Grades 4-12.

MacGlobe. Another electronic world atlas, available in its MS-DOS format as *PC Globe*, has just been released in the Macintosh format and is called *MacGlobe*. The publisher claims to have a million dollars in prerelease orders, based on the popularity of the previous format. *MacGlobe* provides profiles of 190 different countries with maps, graphics and annually updated data. *MacGlobe* even plays the national anthem of each country and displays its flag. $79.95.

The International Inspirer. This award-winning program released last year by Tom Snyder Productions for Apple and IBM, is now available in a Macintosh version. Designed for cooperative learning situations, it enables students to work together to plan journeys around the world, interpret geographic data, including demographic, political, and historical information. Tom Snyder Productions. $119.95. Grades 5-12.

National Inspirer. Don't forget about this sister program from Tom Snyder, now a classic for teaching United States geography. Students in a one-computer classroom travel the country in search of important resources and commodities, and learn the facts about the fifty states. IBM and Apple II, $79.95. Grades 5-12.

ISTE To Provide Restructuring Report

The International Society for Technology in Education (ISTE) has bundled a number of its products about school restructuring in a "toolkit" for educators.

The materials are based on the ISTE's extensive study of school restructuring for the purpose of better preparing students for the information age, which resulted in the *Vision:TEST Project.* The organization hopes that this report, which involved 150 experts in education and technology, will guide future educational decisions.

Print material and videotapes about the project are available from ISTE, 1787 Agate Street, Eugene, Oregon 97403-1923. Phone 503 346-4414.

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Kids Network Expands Programs

New Units on Trash, Nutrition Available

As the National Geographic Kids Network enters its third year of operation, it is increasing its offerings and may expand the program to include grades seven to nine in addition to the fourth to sixth grade audience it now targets.

"The Kids Network is very popular. We get an enthusiastic response from everyone: the students, the teachers, the parents," said National Geographic spokesperson Mary Jane Jacobson.

The Kids' Network revolves around having students do science by using telecommunications to collect data, conduct original research, and share their findings with "research teammates" around the country, and indeed in other countries.

Most of the programs, each of which lasts 10 weeks, deal with serious ecological issues. Students examine a central topic, such as acid rain, through a series of hands-on activities. The most recent study unit, *Too Much Trash*, involves students in collecting and analyzing their classroom refuse. They sort and weigh it and calculate the amount of trash thrown away by each student. They graph their data, then share it with students elsewhere in the country for comparative purposes. They then plan ways to reduce and reuse the trash as they explore environmental effects of various waste-disposal methods used around the world.

Coming this spring is a unit on nutrition, *What Are We Eating?*, in which students will analyze their own lunches for nutrient content and share the data over the network, learning how diet may vary geographically around the world and how diet and culture are related.

Altogether, five units are now available, and they are offered on-line three times a year. Teachers may choose to use just one of the units or all of them. Students do not have access to the units in the first two weeks, so that the teacher will have an opportunity to prepare the lessons.

With the software comes a teacher's guide that includes lesson plans, student handbooks, activity sheets, wall maps, and scientific materials as required. Access to the network is toll-free in the U.S.

The programs may be used with Apple IIgs, Macintosh, and IBM. They require a telephone line that does not go through a voice operator and does not have call waiting.

The programs in the National Geographic Kids Network were originally developed by TERC, a not-for-profit education and development firm dedicated to hands-on math and science learning, with funding from the National Science Foundation. TERC is now creating and testing a similar program consisting of nine units of science material for grades seven to nine. National Geographic is considering undertaking the new program, which will include topics in the physical, biological, and earth sciences. No availability date for the grade seven to nine network has been announced.

Network Science Philosophy

TERC is developing a number of projects based on "network science." In addition to the Kids Network, they have designed the Global Lab project, a program that encourages teachers, high school students, and scientists throughout the world to undertake hands-on scientific investigations of local ecology and global climate change. They are developing low-cost instruments to assist classes in monitoring local sites and collecting data.

TERC's LabNet is a program designed for physics and physical science teachers in grades 9-12. LabNet aims to support them in doing more experimental, collaborative instruction and to foster an exchange of ideas through a nationwide telecommunications network.

The TERC researchers have a number of beliefs that underpin their approach to science teaching via networks. The basic premise in that students can be and should be real scientists and that computers can facilitate this through telecommunications. Other beliefs are:

- Data collection and analysis provide an effective backbone around which to study science.
- Technology greatly enhances classroom inquiries.
- Network science helps a larger proportion of students feel confident about their ability to understand science.
- Students' work in classroom inquiries is of interest to the local community.
- The work of a science classroom is of interest to the scientific community.

To learn more about TERC's activities, write to TERC, 2067 Massachusetts Avenue, Cambridge, Massachusetts 02140. Phone: 617 547-0430.

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THE STATES CONSORTIUM FOR IMPROVING SOFTWARE SELECTION

SCSS UPDATE

STATES CONSORTIUM FOR IMPROVING SOFTWARE SELECTION OCTOBER 1991

Dear Colleagues;

EPIE is delighted that during the first year of the States Consortium for Improving Software Selection that five major states have joined with EPIE to provide teachers the kind of information they need to make informed decisions about the educational software they are using to help students learn.

We at EPIE congratulate those educational leaders in Georgia, Indiana, Michigan, New York & Texas who have pioneered the Consortium during its initial year.

Each state has developed its own unique way of disseminating information to teachers using EPIE's TESS database. Each model is designed to accomplish the goal of improving software selection in schools.

As I write this letter, more than a dozen additional states are considering joining the consortium. They will have the advantage of several excellent statewide dissemination models and valuable experience being developed by current consortium member states. As states begin to share such experiences we think all states will benefit. As managers of the Consortium, EPIE looks forward to facilitating the sharing process.

Cordially,

P. Kenneth Komoski
Executive Director

For Information about the States Consortium, please contact

EPIE Institute

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Hampton Bays, NY 11946
Phone: (516) 728-9100
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States Consortium Improves Software Selection

Forward-looking education agencies in several states have joined with EPIE Institute to form a newly -launched consortium that meets the challenge of providing complete, accurate, and up-to-date information about educational software to educators.

These agencies have recognized that educators are often hampered in their efforts to bring technology into the classroom by the lack of information about software. The marketplace is inundated with educational software; currently over 10,000 programs produced by more than 900 publishers are available. Schools need guidance finding and selecting programs most suited to achieving desired learning outcomes.

EPIE Institute's TESS database, a searchable electronic version of The Educational Software Selector, provides educators with the help they need. It is available in both MS-DOS and Macintosh formats. The database contains descriptive and evaluative information on virtually all educational software on the market.

States license the TESS database from EPIE Institute, which manages the consortium. EPIE provides the database on master-disks, which are copied and distributed to any school, college, library or other educational agencies statewide. At present, the consortium's member states include Michigan, New York, Texas, Georgia and Indiana.

What Electronic TESS Contains

The electronic TESS database, which offers information about over 10,000 programs, may be searched by title, price, grade level, curricular area, subject, computer type, software type, and a number of other categories. For example, a teacher looking for a program to teach U.S. geography to 6th graders priced under $50 can specify those requirements. The database will produce a list of titles that meet the criteria, including review citations, addresses and phone contacts of the publishers, and can supply even names and addresses of teachers who have used the programs. (see sample below)

```
>   SEARCH  QUERY  PARAMETER  REPORT  TOOLS

Query Name:   Product Listing

     Status: Chose 1 value for Subject
Hit Count:

          SEARCH PARAMETER(S) DEFINED SO FAR
COMPUTER FAMILY:
       IBM PC, PS/2 & Compatibles
GRADE LEVEL:
       Intermediate (gr. 4-6)
MAXIMUM ACCEPTABLE PRICE: $  50
SUBJECT:
       Geography
```

Michigan Leads the Way

Michigan was the first member of the States Consortium to have electronic TESS operating on a statewide basis. Electronic TESS is now installed in more than 100 sites in Michigan, including all regional service agencies, some local schools, and colleges and universities.

"We were ready when the Michigan legislature decided to put computers in every classroom," said Rachel Moreno, Chair of the States Consortium and Associate Superindendent of Genesee Intermediate School District (GISD), which piloted and disseminated TESS statewide. "When school leaders asked, 'How will we know what software to buy?,' we were able to say, 'Check with TESS. It's in your ISD.'"

Here's how software selection works in Michigan. If a teacher wants to find software on, say, dissection for a tenth grade biology class, she fills out a form asking for a search by subject, grade, software type, computer type, and price, and sends it along to an electronic TESS site. TESS quickly sifts through the characteristics of all the educational software on the market to give a list of those programs that meet her specifications.

The printout that the teacher receives provides a description of each program, the address of the publisher, review citations, and even the names and addresses of other teachers who have used the software.

Other states are now benefiting from Michigan's experience because new members of the consortium or states considering membership, can consult with Ms. Moreno. The piloting of TESS in Michigan was made possible by a grant from the Mott Foundation.

TESS is Big in Texas

About 6,200 schools in Texas will install electronic TESS this fall, in the widest distribution arrangement yet made by any Consortium member.

According to Nancy Vaughan, Divisional Director of Technical Development at the Texas Education Agency, which made the distribution arrangements for the state, the product will be made available in a number of ways: on the statewide network, on disks, or in print. The Education Service Centers throughout the state will work with individual schools on installation and training.

Vaughan says it is up to the individual schools to decide how to use the TESS database. Probably the computer coordinator or media center director in each school will be trained in its use by the Service Center; he or she in turn may train in the schools.

While schools decide for themselves where to physically locate the database, which requires a dedicated computer, Vaughan believes most schools will decide to keep it in the library. TESS was first demonstrated in Texas by the Center for Educational Technology at Northern Texas State University.

TESS in the University

John D'Angelo of the Center for Educational Technology at Northern Texas State University is integrating electronic TESS into the University's teacher training program.

"Part of the curriculum for teacher training involves exposing students to educational software and helping them to evaluate it," says D'Angelo. "TESS gives students the opportunity to do this in a systematic way. The abstracts are very complete, and all rangesof subjects are included. It's exactly what teachers need."

"There's lots of hardware in schools, but that's only half the story," says D'Angelo. "Unless teachers can find the software they need and can integrate it into the curriculum, hardware will remain on the shelves."

EPIEgram Discount for Consortium Members

Members of the States Consortium may arrange for TESS sites in their states to receive subscriptions to **EPIEgram: The Newsletter about Educational Materials and Technology** at a substantial discount.

This year EPIEgram will greatly expand its coverage of software, offering readers up-to-date information about new software programs as they come on the market and in-depth articles about developments in the educational software field. Readers also can stay current on news about the States Consortium for the Improvement of Software Selection by reading EPIEgram.

For subscription information, please contact, EPIEgram, Sterling Harbor Press, Box 28, Greenport, NY 11944. Published nine times a year, October to June.

The Newsletter About Educational Materials and Technology

What's Wrong With Basals?

NCTE Gives Statement

The space given in the professional literature to whole language theory might lead one to believe that there has been a wholesale move away from basal readers and toward whole language teaching methods. In fact most classrooms are still very much dependent on basal readers. A recent survey indicates that only 10% of principals endorse using children's literature rather than a textbook to teach reading and language arts.

What's wrong with basal readers? A statement from the Commission on Reading of the National Council of Teachers of English, prepared by Connie Weaver and Dorothy Watson, addresses many of the faults of basals.

- Basal reading series typically reflect and promote the common misconception that reading is necessarily learned from smaller to larger parts.
- Basal reading series typically reflect and promote the common misconception that learning to read is facilitated when the earliest reading selections are written in short, simple words and sentences, rather than language which is more complex and more natural, hence more predictable.
- Beyond the beginning levels, "real literature" is more often used in basals. However, these selections all too often are brief excerpts from a work, or, much worse, "adaptations" that severely distort the language, intent, and integrity of the original, thus making the basal reader version much less readable.
- The sequencing of skills in a basal reading series exists not because this is how children learn to read, but simply because of the logistics of developing a series of lessons that can be taught sequentially, day after day, week after week, year after year.
- The preponderance of reading instruction and activities in effect defines reading as identifying words, not as constructing meaning from coherent and connected text.
- Students are typically tested for ability to master the bits and pieces of reading, such as phonics and other word-identification skills, and even comprehension skills. However, there is no evidence that mastering such skills in isolation guarantees the ability to comprehend connected text, or that students who cannot give evidence of such skills in isolation are necessarily unable to comprehend connected text.
- So much time is typically taken up by "instructional" activities (including activities with workbooks and dittos) that only a very slight amount of time is spent in actual reading—despite the overwhelming evidence that extensive reading and writing are crucial to the development of literacy.
- Basal reading series typically reflect and promote the widespread misconception that ability to verbalize an answer, orally or in writing, is evidence of understanding.
- Reading "comprehension" is all too often measured by students' ability to locate a correct answer in a passage or reading selection, without regard to whether the selection has been understood, or even read. Thus, even students who appear to be learning from basal reading series are severely shortchanged, for they are being systematically encouraged not to think.
- Basal reading series typically tell teachers exactly what they should be and say in teaching a lesson, thus depriving teachers of the responsibility and authority to make informed professional judgments.
- "Going through the paces" thus becomes the measure of both teaching and learning. Teachers are assumed to have taught well if, and only if, they have taught the lesson. Students are assumed to have learned if, and only if, they have given the "right" answers.
- The result of such misconceptions about learning and such rigid control of teacher and student activities is to discourage both teachers and students from thinking, and particularly to discourage students from developing and exercising critical literacy and thinking skills.

Science Book List Available

A list of the outstanding science books for children published in 1990 is available from the Children's Book Council. The list includes 87 books for children in pre-K to eighth grade, all of which were selected because they are readable, contain information "consistent with current scientific knowledge," and have formats and illustrations that are attractive. For a copy send a stamped (52 cents) 6 x 9 envelope to Children's Book Council, 568 Broadway, Suite 404, New York, New York 10012

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Text Content Must Match Reader

Continued from page 1

Those who read at about two or more grade levels below the norms did not do well on materials a grade or two above their reading levels. This group constituted about one- fourth of the student population. They were in regular classrooms, exposed to the regular curriculum. They were not in special education classes for the handicapped. Such students found the assigned social studies and science textbooks too difficult. Only their reading textbooks could be read with ample understanding.

The usual suggestion made in content-area methods textbooks for resolving the inadequate match between less able readers and their content-area textbooks is that teachers use easier books on the same topic for the below-average readers. But our analysis of textbooks indicates that such books do not seem to exist. Other suggestions are that teachers rewrite on a lower reading level portions of the required text. This strikes us as unrealistic. It is extremely difficult to simplify text while at the same time keeping the content similar and accurate. It is also very time-consuming. Indeed, professional educational writers and editors are increasingly being criticized for doing it poorly.

One way that many teachers solve the problem is by not using any textbooks at all with students who read poorly. Instead, they lecture, use pictures to demonstrate, or direct discussions. This also appears to us to be a less-than-satisfactory solution. While the poor readers may learn some content this way, they cannot develop their reading abilities if they do not read.

This is an area we believe to be of greatest need in educational publishing. There is a need for textbooks and instructional materials that can be used by students in the lowest quartile in reading—those reading two or more grades below the norms. Such materials are needed for learning content and for developing reading and language proficiencies.

The students who read poorly were remarkably sensitive to their needs. Most wanted books that they could read and understand. They knew why they could not understand their textbooks. The younger ones (fourth and sixth graders) said it was the hard words that made their texts difficult. The older students (eighth and eleventh graders) said they had difficulty because of their book's organization and ideas.

Another group not adequately served was those who read about two grades or more above the norms. Their reading textbooks especially provided little or no challenge, since they were matched to students' grade placement, not their reading levels. Many students were aware of this and said in their interviews that they preferred harder books because they learned more new words and ideas from them.

Since harder reading textbooks were readily available, one may ask why they were not used with the more able readers, as were the easier reading textbooks for the less able readers. This practice of using grade-level reading textbooks for those who read two or more grades above the norms has changed little through the years, although it has been repeatedly questioned. It would appear that, for various administrative reasons, most teachers do not use a reading textbook that is above the student's grade placement. The reason most often mentioned is really a question: If the third-grade teacher uses fourth-grade books, what is the fourth-grade teacher to do?

In sum, the subject-matter textbooks published in the United States represented a rather narrow range of difficulty for each grade we analyzed, more narrow than the range of reading ability found among students. It was also narrower than the range found on standardized tests. Although the publishers described their textbooks as being developed for "wide use" or for "more able" or "less able" readers, our analysis found them suitable mainly for the middle range of achievement within each grade.

Practically none of the content textbooks seemed to be written for the students in the lowest quartile in reading. Further, the books that publishers labeled for less able readers were often more difficult than those labeled for a wide audience or for more able readers.

Only the types of questions asked in the textbooks, workbooks, and teacher's manuals seemed to differ: The books for the below-average readers had more factual and fewer inferential questions than the ones for the average or above average readers.

On the whole, the average readers for each grade were served best, the above-average less well, and the lowest quarter in reading ability were served least by the available textbooks.

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Research & Reports

School censors are using the courts. This is one of the findings of the newest annual report from People for the American way, *Attacks on Freedom to Learn, 1990-1991*. Right-wing religious organizations, the source of one- third of the attacks, have formed litigation arms and are preparing to step up their efforts to remove from schools materials that do not support their views. Here are other findings from the report:

- A new tactic has emerged—right-wing religious organizations are running candidates for school boards. One of these groups, The Citizens for Excellence in Education, has published a handbook, *How to Elect Christians to Public Office*, and members of the group have stated that they want to revert to Christian control of schools.
- The attacks were wide-ranging. While the *Impressions* reading series remained the prime target (See *EPIEgram*, Vol. 16, No. 2), also attacked were drug abuse prevention programs, AIDS education, and a variety of trade books, including *My Friend Flicka* and *Webster's Ninth Collegiate Dictionary*.
- The attacks were successful. One-third of requests for removal of materials were effective in some part, often because schools did not use written procedures for handling complaints.
- The number of incidents increased, and they occurred in all areas of the country. There were 264 challenges to material in the 1990-91 school year, a 20 percent increase over the previous year. California had more occurrences than any other state.

Five out of ten school principals report that they encourage teachers to use children's books in conjunction with their reading textbooks. Only 10% of principals, however, said they encourage teachers to utilize children's books instead of traditional texts to teach reading and language arts. Principals allocate between $1557 and $3538 per year per building to purchase children's books for classrooms. Children's books are used most frequently in reading and language arts classes (97%), with only 15% of social science classes and 8% of science classes using them. These findings were a result of a survey by the Children's Book Council.

Of the twenty best-selling paperback children's books of 1990, as determined by the *Publishers Weekly Bestseller List*, nine of the titles were in the *Teenage Mutant Ninja Turtles* series, four were in the *Baby-sitters Club* series, and two were about the rock group New Kids on the Block. The only titles that could be considered quality children's literature were *Charlotte's Web* (15th place) and *Where the Wild Things Are* (last place).

That basal readers remain firmly entrenched in many classrooms is further indicated by a study of the amount of time teachers—all of whom were trained in the last five years—spend in class on activities consistent with whole language theory. Researchers found that less than 10 percent of time was spent on whole language activities. The most frequently observed teacher behavior was using basal readers, workbooks, or worksheets. Students read in basal readers for both oral reading and silent reading.

"Accuracy and correctness were emphasized while students were reading orally from basal readers, programmed readers, workbooks, or worksheets. . . . Time used to build background was predominantly in conjunction with a basal story. Basal reader tests were used for formal evaluation of reading progress." This research was reported in "Whole Language Practices In First Grade Reading Instruction" by Paul M. Hollingsworth, D. Ray Reutzel, and Elaine Weeks (*Reading Research and Instruction*).

Students may be charged fees for basic academic textbooks and materials in fifteen states: Alaska, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Mississippi, New Hampshire, New York, North Carolina, South Carolina, Tennessee, Utah, and Wisconsin. Lab fees and field trip fees are permitted in 20 states. Fees are permissible for workbooks (15 states) and general supplies (12 states) and pencils and paper (11 states each). These are the findings of a study by Roger W. Hamm and Sandra Crosser, reported in "School Fees: Whatever Happened to the Notion of a Free Public Education?" (*American School Board Journal*). When the courts have considered the legality of school fees, they have viewed the issue on the basis of whether the fees

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Research & Reports

Continued from previous page

interfere with equal access to public education. While some courts (in Colorado, Indiana, and Wisconsin) have upheld textbook fees, more often the courts distinguish between fees for extracurricular activities and academic activities, and consider the academic fees more restrictive.

"Student user fees...are a regressive form of taxation: They are not determined by the family's ability to pay, its overall economic situation, or the number of family members in school and paying fees. As a result, the assessment of any school fees—whether for academic or nonacademic purposes—raises question as to whether all students have equal access to public education," write the authors.

How does television viewing affect reading? In a study of the research on the topic, "Reexamining the Research on Television and Reading" by David Reinking and Jen-Huey Wu (*Reading Research and Instruction*), the authors found that the relationship between reading and television is extremely complex. But research of the last decade seems to indicate:

- Moderate television viewing—up to three hours a day—may *increase* reading achievement, especially for children at lower socioeconomic levels. This is because television can provide background knowledge, vicarious experience, and a richer vocabulary—all of which are important elements in learning to read.
- Viewing television at excessive level—more than three hours a day—does appear to have a negative impact on reading. In fact, once viewing increases beyond three hours a day, the more a student watches TV, the more his or her reading ability decreases.

Nearly seventy percent of fourth and eighth graders reported watching television three or more hours a day, according a survey by the National Assessment of Educational Progress. Twelfth graders tended to watch television less, with fewer than 50% of them spending three or more hours a day in front of the tube.

Learning a computer language may have benefits that extend beyond the content of the language. Students learning programming also acquire cognitive skills, such as reasoning, logical thinking and planning, and general problem-solving. These were the findings reported in "The Effects of Computer Programming on Cognitive Outcomes: A Meta-analysis" by Yuen-Kuang Cliff Liao and George W. Bright (*Educational Computing Research*). Overall, students having computer programming experiences scored about 16 percentile points higher on various cognitiveability tests than students who did not have programming experiences.

"Left unanswered is the question of whether computer programming is as efficient, or any more efficient, at developing these cognitive abilities than other possible instructional approaches that teachers might use," write the authors.

What software will your students need to use when they get to college? In "Software Tools for Students in Higher Education: A National Survey of Use" by Mary Alice White and Carol Righi (*Educational Technology*), the researchers found "diversity in the software offered at institutions of higher education, but also that the situation is close to chaotic." An enormous range of software packages are reported to be popular, so that finding patterns of use were difficult. However, the researchers determined that the most popular word processing programs were *WordPerfect*, *Word*, and *MacWrite*. The most popular graphics programs were *MacDraw*, *SAS*, and *MacPaint*. Among spreadsheet/databases, the most popular were *Lotus 1-2-3*, *Excel*, and *dBASE*. The results also indicated a lack of tools designed to help students with their research and scholarly writing.

EPIEgram

Affiliated with EPIE Institute

EPIEgram is published in cooperation with EPIE Institute by Sterling Harbor Press, P. O. Box 28, 146 Sterling Avenue, Greenport, New York 11944. Subscription rate for 9 issues a year (October through June) is $65. Additional subscriptions to the same address are $25.

Joanne Dolinar and Earl Fultz, Publishers
P. Kenneth Komoski, Exec. Director, EPIE Institute

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Cultural Literacy for Kids

New Series Targets Primary Grades, Parents

Educator E. D. Hirsch has advanced the idea that a common core of knowledge exists—a shared body of information that people readily assume others know—and that each child should acquire that knowledge in the early grades or be forever be left behind their better-informed peers.

In his best-selling book *Cultural Literacy*, Hirsch spelled out that core of knowledge.

Hirsch now takes his program a step further in a series of books aimed at parents and children as well as teachers. The *Core Knowledge Series* contains what Hirsch believes children need to learn grade by grade of this common core of knowledge. Projected as a six-book series, each title spotlights five areas—American and world civilization, literature and language, fine arts, science and technology, and math. There are activity boxes to assist in learning. Parents are asked to work with their children by reading to them and working on the activities.

The first two books in the series, published by Doubleday, are *What Your 1st Grader Needs to Know* and *What Your Second Grader Needs to Know* ($15 each, hardcover). The third and fourth grade volumes will be ready in August 1992, followed by the fifth and sixth grade volumes in August, 1993.

According to the publisher, the series was four years in planning and writing and has had input from over 100 experts, plus a network of some 2,000 parents and teachers.

The author contends that if students are given a shared "core knowledge," it will balance the scales between the privileged and disadvantaged and also help motivate children by providing definitive and attainable standards every student can reach.

The publisher expects that the books will be used in classrooms as well as at home. Several schools have already adopted the program for classroom use. In Dade County, Florida, sixteen schools in the district are using the books, and hopes are that elementary schools nationwide will soon announce plans to initiate the program.

EPIEgram FEEDBACK FORM

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EPIEgram

The Newsletter About Educational Materials and Technology

Sterling Harbor Press
P.O. Box 28
146 Sterling Avenue
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Special Double Issue

Earl L. Fultz, Publisher/Editor | Volume 18 Nos. 3 & 4 | January, 1992

DIRECTOR'S COLUMN

Ken Komoski
Exec. Director
EPIE Institute

The word is "Systemic"

The amount of advice, opinion, and theories on how to make American education "world class" is so overwhelming that it makes an already difficult situation appear even more unsolvable.

The image that comes to mind is that of the Gordian Knot, so complex it has neither ends nor beginning, everything so intricately interconnected that it cannot be untied.

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Educators Find Funding Sources For Materials & Technology.

The pioneers' admonition to "Make it, make do, or do without," is not enough to survive present-day scarcities. The village smithy can't hammer hot metal into a computer, and no one has yet knitted a program to teach math to fifth graders.

But many schools are showing a pioneering spirit and true grit in the face of the budget crunch. Examples:

Massachusetts schools ran into financial problems somewhat before the rest of the country; but the **Mansfield Schools**, under the direction of Dr. Richard Warren, are better than ever (winner of National Award for Excellence from U.S. Department of Education) because of comprehensive programs that leave no stone unturned. E.g.:

☞ Education foundation formed so local citizens can contribute to specific activities.

☞ School/business partnership with local industry (such as Kodex division of Motorola), providing training, space, resources. RIF, Family Expo, financing summer school.

☞ A change in vacation schedules uses teachers and facilities more productively. Buses moved to a four-tier system for greater efficiency.

☞ Hired the Marriott Corporation to supervise maintenance of buildings and grounds, and purchase cleaning materials and supplies at lower cost.

Continued on page 4

"True Believers" Access TESS in Non-Consortium States.

Since its inception, the States Consortium for Improving Software Selection (SCISS) has been wrestling with the problem of what to do for schools that recognize the importance of the TESS software database but are in states which have not yet joined the Consortium.

In a reversal of previous policy, the Consortium will now provide access to TESS for a limited number of schools and with very specific restrictions.

The TESS database (TESS stands for The Educational Software Selector) has key information on some 11,000 educational software programs, essential information for decisionmakers purchasing software. Until this recent decision, the electronic database was available only to members of the Consortium; schools even in those states which are in the process of becoming members have had to wait until it was official.

(A smaller print version, *The Latest and Best of TESS*, continues to be available.)

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Consortium/TESS Update P.9

Featuring the TESS IN-BASKET of latest and best new software programs.

BEST COPY AVAILABLE

"A New Beginning"

Each day is a new beginning,
Each day the world is born anew.

"New Beginning" seems rather redundant, but it is an appropriate description for this issue of EPIEGRAM since its original beginning was in 1973. Editorially, the accent was on textbooks and audio-visual materials and hardware.

EPIEGRAM had another "New Beginning" in the early '80s when the newer technologies began to emerge, especially the computer. EPIEGRAM responded appropriately and, when EPIE Institute began to build TESS, The Educational Software Selector database, more and more information on software began to appear, culminating in a second newsletter, *Microgram*, devoted entirely to the newer releases.

EPIEGRAM'S latest "New Beginning" is in recognition of research and thinking which has been going on in EPIE Institute for quite a number of years: that it is not enough to have information about educational software and technology, the user must appreciate how it all should fit together – what we are calling the *systemic* approach.

In addition, a new force in software selection is emerging, the States Consortium on Improving Software Selection. As we go to press, three new states are about to announce their participation and others are well advanced in their consideration. In recognition of this, the middle section of the newly enlarged EPIEGRAM will be devoted each month to the latest and best new educational software releases, as well as information about the Consortium and news from Consortium states.

We welcome your comments on our efforts. Tell us how we can best fill your needs. As detailed elsewhere, we welcome your contributions, including your opinions for FAX POPULI.

These are challenging times in education. EPIEGRAM will be edited to help you keep up with the challenge.

Ken Komoski
Executive Editor

Earl L. Fultz
Editor & Publisher

"They Laughed when I sat down to play"

was not only one of the great advertisements of all time, it was also touting one of the early forms of "distance learning," a correspondence course on how to play the piano.

Whatever it is called, the ability to learn at a site remote from the instructor has the look of an idea whose time has come, an idea accelerated by the $63 million allocated by the U.S. Department of Education to implement the "Star Schools" grants program begun in 1988.

While absolutes as to effectiveness are hard to come by, several evaluations are in the works and enthusiasts abound. Some gleanings:

Whether down the hall or across the continent, Distance Learning works best with independent and highly motivated learners.

Distance Learning can provide schools with courses that would otherwise not be taught due to shortage of teachers (in languages, for example), small class size (would not justify hiring a teacher), budget restraints (DL can save money; charges, sometimes, are only for materials and credit hours).

Some students definitely feel isolated from the instructor, but the lack of two-way communications is offset by having an audio link for questions and "key pads" (pioneered by Kentucky Educational Television [KET]) for answering T&F and multiple-choice questions. This real-time feedback lets the DL teacher know immediately if the lesson is being understood, even, or especially, when teaching hundreds of students at a time.

A full 50 minutes is taught, a key point since some research suggests as little as one-third of classroom time is spent in actual instruction.

"Facilitators," rather than certified teachers, can be used in Distance Learning; sometimes parents are used. The facilitator takes attendance, keeps order, and helps maintain a high level of enthusiasm.

Just about everyone agrees there is a real need for better analysis of the dynamics of Distance Learning, both its strengths and its weaknesses. Some observers (Office of Technology Assessment) feel that

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Aspects of "Systemic" Thinking

by Ken Komoski

The first in a series of commentaries on the need for Systemic Change in education.

The first thing to recognize about Systemic Change or Thinking is that no one knows it at all. On the other hand, there is quite a bit of it going on, even if not recognized as systemic.

Rather than approach the subject directly, I am first going to put down a number of seemingly random thoughts which will be brought together at the end of this commentary.

1) *Systemic* implies a system and, in the case of education, a system designed to develop the full potential of human abilities.

2) In order to improve an overall system, it is necessary to have specific, reachable goals.

3) A system becomes systemic when all parts relate to one another appropriately and to the overall system.

4) It is impossible to improve an educational system without creating an improved learning environment.

5) Single-issue "fixes" of part of the system (e.g., a longer school day or school year) not only require additional funds but are almost useless if the quality of curriculum, educational materials and technology, assessment, and the skills of both teachers and administrators are not upgraded. (Doing things the same way, making decisions without better information, will bring much the same results as before.)

6) When budget and resource restraints make the time available for teaching *non-expandable*, the real issue becomes one of "productivity," which is to say, how to make the best use of the time available, not by doing more of the same but by doing better what needs to be done.

7) America was long the leader in increasing productivity whether in the factory or on the farm. Productivity does not mean one must work longer or harder. Rather, productivity is increased by the more effective use of time and energy, by the elimination of waste. Historically, this has been accomplished through the development of better tools (technology) and their effective application.

8) In today's educational systems, most of our tools (textbooks and other instructional resources) are a) far from what they ought to be; b) align poorly with a school's goals; and, most importantly, c) fail properly to engage the "energy for learning" inherent in the student.

9) EPIE research shows that educational materials being used almost *never* align with the curriculum more than 70% of the time, and the norm is more likely to be 40-50%.

10) The biggest single reason for this lack of alignment is that in most classrooms, the textbook becomes the curriculum. Teachers fall blindly into following the textbook, generally unaware that most textbooks cover far more content than can be reasonably taught in a school year.

11) The reason is, of course, that textbooks are written to be acceptable to as many educators as possible. As in Aesop's fable, when one tries to please everyone, one ends up pleasing no one.

12) Productivity will increase by as much as 50-60% if the teacher has the teaching materials that align with the curriculum.

13) The average school district spends around 1% on teaching materials and technology.

14) If only 1/100th of the school budget available, there is even more reason why the teaching materials and technology must be aligned and on target.

15) To be "world class" will require an expenditure of more than 1% because schools must have educational materials and technology which are fully aligned with the curriculum and have teachers who know how to use them properly in the classroom.

16) In a technological society, *productivity* and *systemic* are Siamese twins. Unless used properly, technology can be excessively wasteful (e.g., an unused pencil is only minimally wasteful; an unused computer is not only wasteful of financial resources but intellectual as well).

17) Technology used systemically (e.g., minimizing waste) leads immediately to increased productivity.

Conclusion. Humans seem naturally

Continued on page 4

Aspects of Systemic Thinking

Continued

resistant to change and this undoubtedly has helped create stable, cohesive societies. Technology, however, forces change; if society resists this change, its productivity soon lags.

America grew up wasteful of natural resources; as technology emerged, we tended to be wasteful of it as well. (The automobile, for example, or the 40 channels of television, the 11% of a consumer product's price which pays for the packaging, central heating, hot water on demand, etc.)

And we are wasteful of our intellectual potential. We do not fit our children for life in a technological world and one with limited resources.

The time has come—indeed, it is past time—to begin to increase productivity by eliminating waste and our educational institutions are an appropriate place to start.

The piecemeal introduction of technology into the educational system has been extremely wasteful because little thought has been given to how the technology fits together and how it can be used to reach specific objectives. Indeed, we don't have such objectives; we do not know what a student should or should not know at a given point. We don't even agree on what constitutes an educated person.

It is not necessary to use technology systemically for it to be useful and valuable. A standalone computer can justify its own existence if the appropriate software has been selected.

However, for the computer—or any technology, including print—to be fully productive, it must ultimately be part of a systemic solution for the entire organization.

It is sufficient for the beginner to keep an open mind, to be ready to learn, to adjust, to join the systemic solutions as they emerge. (What has been referred to as "concurrent engineering" or redesigning a plane while flying it.)

History is full of examples in which those who resisted change were ultimately overwhelmed by it. The Luddites could not keep the Industrial Revolution from bringing about rapid change in the 19th Century and contemporary Luddites will fare no better. An even greater revolution is taking place now and, as in any period of change, security lies not in resisting change but in wholeheartedly supporting it.

Because the truth is, whether you plan it or not, you have systems; it's how work gets done. Unplanned systems are invariably inefficient; systems must fit together to gain maximum efficiency. Systems that are linked to other systems to form a cohesive, functioning totality is what we mean by the word *systemic*.

One brief example of a systemic approach: assume a total information system in a school, one where information (such as availability of teaching materials) is easily accessible to everyone.

Recognize that the best decisions on teaching materials will be made by the person who has the best information. Once the classroom teacher has access to all the information formerly available only to others further up in the hierarchy, and combines this with knowledge about the students in his/her classroom, the person best qualified (i.e., the person with the most information) to make a decision about teaching materials is the teacher, not someone far removed from the realities of that particular classroom.

When teachers are able to choose those materials which are closely aligned to their classroom's needs, American education will have become World Class. That is the promise of a systemic approach.

Educators Find Funding

Continued

☞ Building new K-5 school (capacity 1200) and retiring two ancient, costly-to-maintain schools.

In **Oakland, Maryland**, where state aid has been sharply reduced ("lethal," one official called the cuts), the measures are draconian. Each teacher takes five unpaid furlough days (a saving of $75,000 a day) and everyone from superintendent Jerome Ryscavage on down takes turns as substitutes.

Asbestos removal has been put off; special-ed budgets have been reduced; maintenance is deferred; teachers' workshops and conferences are greatly reduced; anyone holding a college degree is asked to volunteer; buses are loaded to the maximum without standing; supplies are cut ("We're polishing with water"). Officials say they don't have many options left.

One bright spot: the school run especially for Amish students. **"The Amish approach** is so frugal," said John Morris, Assistant Superintendent for Administrative Services, "they don't notice any difference."

In **Fernandina Beach, Florida**, the Nassau County Schools just had their sixth reduction of state funds in two years. Superintendent Craig Marsh is philosophical: "Face it, schools have to do more with less."

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Small Colleges More Responsive to Community Needs than Are High Schools

Large corporations have the resources to set up their own training programs, but small and medium-sized manufacturers faced with the problem of finding skilled workers among high-school graduates, are turning to community and junior colleges.

Increasingly, community colleges are becoming the conduit by which technology reaches the local business community. Experts cite a number of reasons: flexibility of curriculum in contrast to the rigidity of the K through 12 system; a willingness to experiment; and an aggressive responsiveness to local needs.

Computer-based courses are of particular importance, including CAD (Computer-Aided Design) and CAM (Computer-Aided Manufacture), but courses relating to robotics and automation are beginning to show up, as well as programs on hazardous waste and the environment. Degrees are being offered in industrial technology or machine processes, and graduates find a ready job market even in recession.

According to the American Association of Community and Junior Colleges, there are about six million students taking courses for credit in the more than 1200 institutions, with another five million in non-credit training programs.

To date, some 50 community colleges have built technology centers in direct response to the needs of local manufacturers. The California Community College System, with 107 schools, is in the process of setting up 16 centers for Applied Competitive Technologies. The Tennessee Valley Authority is helping some 40 colleges upgrade technologically, and, to assure that trainers will stay up to date, has helped establish a National Institute for Technical Training at Mississippi State University.

Advisory Panel Urges National Tests and Standards for All

The National Council on Education Standards and Testing, an advisory group of major political and education leaders created by Congress last June, is calling for voluntary national curriculum standards and national tests for all American schoolchildren.

The report, not yet officially released, is already drawing fire from educators. One of the concerns is that such standards and testing will discriminate against poor children unless the resources are provided to upgrade substandard schools.

Critics also contend that excessively detailed standards will stifle teacher creativity, deny parents a voice, and cause political battles over what children should learn.

The National Council of Teachers of Mathematics has already drawn up nationwide mathematics standards and the National Academy of Sciences is working on science standards. The National Endowment for the Humanities has announced a $1.6 million grant to develop history standards and California has also drawn up curriculum outlines in several subjects.

Critics point out that while it is relatively easy to set standards for math and science, efforts to do so in history and English have caused huge controversy.

Watch for more fireworks when the report is sent to Congress, Secretary of Education Lamar Alexander, and the National Education Goals Project the middle of this month, and very likely for the foreseeable future.

Panics, in some cases, have their uses: they produce as much good as hurt. Their duration is always short; the mind soon grows through them and acquires a firmer habit than before.

— Thomas Paine, *The American Crisis*, 12/19/1776.

OP-ED/GUEST

John Tayor Gatto

I May Be A Teacher But I'm Not An Educator.

I've taught public school for 26 years but I just can't do it anymore. For years I asked the local school board and superintendent to let me teach a curriculum that doesn't hurt kids, but they had other fish to fry. So I'm going to quit, I think.

I've come slowly to understand what it is I really teach: a curriculum of confusion, class position, arbitrary justice, vulgarity, rudeness, disrespect for privacy, indifference to quality, and utter dependency. I teach how to fit into a world I don't want to live in.

Government schooling is the most radical adventure in history. It kills the family by monopolizing the best times of childhood and by teaching disrespect for home and parents.

An exaggeration? Hardly. Parents aren't meant to participate in our form of schooling, rhetoric to the contrary. My orders as schoolteacher are to make children fit an animal training system, not to help each find his or her personal path.

Socrates foresaw that if teaching became a formal profession something like this would happen. Professional interest is best served by making what is easy to do seem hard; by subordinating laity to priesthood. School has become too vital a jobs project, contract-giver and protector of the social order to allow itself to be "re-formed." It has political allies to guard its marches.

That's why reforms come and go – without changing much. Even reformers can't imagine school much different.

David learns to read at age four; Rachel, at age nine: in normal development, when both are 13, you can't tell which one learned first - the five-year spread means nothing at all. But in school I will label Rachel "learning disabled" and slow David down a bit, too.

For a paycheck, I adjust David to depend on me to tell him when to go and stop. He won't outgrow that dependency. I identify Rachel as discount merchandise, "special education." After a few months she'll be locked into her place forever.

In 26 years of teaching rich kids and poor I almost never met a "learning disabled" child; hardly ever met a "gifted and talented" one, either. Like all school categories, these are sacred myths, created by the human imagination. They derive from questionable values we never examine because they preserve the temple of schooling.

That's the secret behind short-answer tests, bells, uniform time blocks, age grading, standardization, and all the rest of the school religion punishing our nation.

There isn't a right way to become educated; there are as many ways as fingerprints. We don't need state-certified teachers to make education happen - that probably guarantees it *won't*.

How much more evidence is necessary? Good schools don't need money or a longer year; they need real free-market choices, variety that speaks to every need and runs risks. We don't need a national curriculum, or national testing either. Both initiatives arise from ignorance of how people learn, or deliberate indifference to it.

I can't teach this way any longer. If you hear of a job where I don't have to hurt kids to make a living, let me know. Come fall I'll be looking for work, I think.

Mr. Gatto is New York State Teacher of the Year for 1991, a title conferred by the State Education Department. Reprinted from The New York Guardian.

Error of opinion may be tolerated where reason is left free to combat it.

— Thomas Paine.

Mere parsimony is not economy.... Expense, and great expense, may be an essential part of true economy.

— Edmund Burke, *Letter to a Noble Lord.*

STATS

There are only 400,000 personal computers in what was the Soviet Union, compared to 55 million in the U.S.; but there are more than 1.5 million engineers and scientists, twice the number in the U.S.

✎

Numerous studies report that textbooks structure from 75% to 90% of classroom instruction. In most areas, textbooks (still) define the scope and sequence of instruction, and the accompanying teacher guides provide a road map from which few teachers make major detours. *Woodward & Elliott, 1990.*

☞ Reconfirming EPIE's landmark results of 1975. *EPIE.*

✎

Six out of ten American adults say that one particular teacher made a difference in their lives. *CBS News.*

☞ We wonder how many would say that a particular textbook made a similar difference. *EPIE.*

✎

Ninety-four percent of third and fourth graders read at "grade level," but 40% of seventh and eighth graders have trouble reading and understanding their textbooks. *National Center for Ed. Statistics.*

☞ Is something strange going on in grades five and six, or are textbooks suddenly getting harder in grades seven and eight? And what does "grade level" mean, anyway? *EPIE.*

✎

Increase of immigration and globalization of business and scientific information is bringing rapid growth to translation services, which may soon gross as much as $10 billion annually worldwide.

✎

State education spending reached $185 billion in fiscal 1990, slightly less than one-third of all state spending. *U.S. Census Bureau.*

✎

On average, six out of ten high-school students will have used alcohol within the past month; four out of ten will have had more than five drinks on at least one occasion. *National Center for Disease Control.*

✎

Highest "binge" drinking among high-school students is found in New Mexico (45%), lowest in Washington, D.C. (17%). *Youth Risk Behavior Survey.*

✎

Fifty-eight percent of children ages three to eight are read to several times a week by parents or sibling, with 35% read to daily. Only 7% of the children are never or rarely read to. Reading to children decreases as they grow older. *National Center for Ed. Statistics.*

DISPATCHES FROM THE FRONT

Retirement of White Male Principals Provides Opportunity for Women and Minorities

According to the American Association of University Women, women are about two-thirds of the nation's public-school teachers, but only 5% of the superintendents. It should be noted, however, that the latter figure was only 1% in 1970. Of the more than 3,000 college and university presidencies, slightly more than 10% are held by women.

If New York City is an example, however, the budget crunch will accelerate change. In order to save a much-needed $40 million, principals older than 55 are being offered early retirement. Since most of these are white males, replacements will have a higher percentage of women and minorities, both female and male. Progress, while steady, won't be dramatic. New York, with a student body of almost one million, of which 80% is black, Hispanic, or Asian, will still have 66% white principals, most of them male.

Consortium Helps Athletes Get an Education

One of the scandals of school sports programs is that while coaches are fond of promoting sports as helping "fit one for life," academic achievement is all too often subordinated to the rigorous demands of the playing field. Stories of high-scoring athletes who can't read are not uncommon.

An antidote, begun in 1984, is the National Consortium for Academics and Sports, based at Northeastern University in Boston. The 78 colleges and universities in the consortium have numerous programs that reach from elementary to college level to help the student athlete have a meaningful life after sports; more than 800,000 youths were reached last year.

A key part of the program is the Degree Completion Program which assists former college student-athletes who did not complete their degree requirements. By agreeing to participate in the School Outreach Program which challenges younger students to stay in school, and to stay off drugs, the athlete who never made it to the pros can go back to college tuition-free.

As of the end of 1991, more than 2,400 college-level athletes have returned to complete their degrees, and some 900 have graduated.

The Director of the Center and the National Consortium, Dr. Richard Lapchick (son of the legendary pro basketball player Joe Lapchick), is the author of seven books, including *Broken Promises: Racism in American Sport; Ethics in College Sport* (with John Slaughter); and *Five Minutes to Midnight: Race and Sport in the 1990s.*

For more information contact: Center for the Study of Sport in Society, Northeastern University, 360 Huntington Avenue #161CP, Boston, Massachusetts 02115. Telephone 617 437-4025.

Tough Teach Favored by Black Educators

At the annual conference of the Association for the Study of Afro-American Life and History, more than 1,000 black educators agreed that cultural pride combined with strict rules and regulations are necessary in predominantly black school districts, citing lower dropout statistics in schools where black students receive heavy doses of African culture.

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RESEARCH & REPORTS

New research suggests dyslexia (often termed "reading disorder") may be linked to vision problem, not just an inability to understand language. The visual system has two pathways, magnocellular (fast processes) and parvocellular (slower), and researchers suggest the problem appears to be in the fast-processing pathway. Incidence of learning disabilities among students may be as high as one in seven.

American College Testing of Iowa City received $1.3 million contract from the National Assessment of Educational Progress to develop standards for 1991 NAEP assessments. ACT is to recommend what students should know and be able to do in mathematics, reading, and writing in grades 4, 8, and 12. Recent results show that fewer than 20% of students attain proficiency in math.

Heads of small schools spend less and less time on instructional leadership - so state Perry and Perry in the November 1991 *NAASP Bulletin*, quoting from survey covering 1985 to end of the decade. Possible reason: those in control are increasingly non-academics (e.g., athletic directors, guidance counselors).

Public/private enrollment ratios: more than 5 million or 12% of K-12 students are in private schools (about the same number as were in Roman Catholic schools alone in 1964).

Total of non-Catholic private-school students passed Catholic enrollment in 1985. One in five families with income above $50,000 sends children to private school.

On the rise: home schooling, for which no official figures are available. Estimates range from 220,000 students to more than 1 million. And at least one company specializes in the marketing of instructional resources for "home schoolers."

Why "Leavers" leave: Biggest reason teachers leave teaching is not money (7% in public schools, 16% in private), but "inadequate support from the administration:" 26% public and 22% private.

American kids ask it, too. The New York *Times Magazine* reported that a Japanese high-school teacher lamented that his students were surprised to learn that Japan had fought a war with the United States. Most frequent question: Who won?

Be all you can be minus 15%. Anyone who spends time in the armed forces can expect lower lifetime earnings as a civilian (an estimated 15% for Vietnam veterans, for example). That is conclusion of two economists (Angrist & Krueger), who point out that earnings rise with experience and veterans get less on-the-job experience at a crucial time.

Parallel processing observed in brain. First photos of the human brain actually performing simple tasks, such as recalling a word, indicate far more than the hippocampus (long known as site where memory is formed) becomes involved. Prefontal cortex, the exact function of which is still largely a mystery, appears to take a leading role, probably in directing the memory search.

Kids need the sheepskin more than the sheep. Sixty percent of 1990 high-school graduates were enrolled in college by the following fall.

Of 40% of high-school graduates who did not go to college, close to 1 million (19.1%) were still unemployed by the following October. For those who did not complete high school, the unemployment rate was 32%.

Three out of four Americans complete high school, one in five holds a college degree.

States with highest college-graduation rates:

Massachusetts	28.1%
Connecticut	27.5%
Maryland	27.4%
Virginia	27.3%
Colorado	27.0%

States with lowest high-school completion rates:

Alabama	63.2%
Kentucky	64.7%
Tennessee	65.4%
Arkansas	67.6%
Mississippi	67.7%

Looking for love in all the wrong places. Computer widows and mothers of male "hackers" now have an explanation for their spouse or son's behavior. According to recent research presented in "Gender Experience and Attribution to the Computer," (Hall & Cooper), men develop more "personal relationships" with computers than do women.

Prekindergarten programs now enroll 3.3 million children, a growth of more than 44% since 1980. Biggest problem: lack of English-language skills. Latest study of school readiness (Carnegie Institute for the Advancement of Teaching, Princeton, New Jersey, 1991) finds that in most states more than 25% of 5 to 6-year-olds lack language/social skills expected by schools.

One out of every four Americans (68.4 million) is involved in education as a student, teacher, administrator, or support staffer.

Estimated total education expenditures: $415 billion, with $250 billion for elementary and secondary education alone. Estimated average per-pupil expenditure in 1992: $5,961, an increase of $213 from '91. Estimated average salary: $34,814.

High-school completion rate: 87%, only one point greater than in 1973. Large gains recorded for black students (78%, up 10% from 1973), but Hispanics lag (60%).

Educators Find Funding

Continued

Among their reductions:

☛ Energy-management control is so tight it gets reprogrammed from the custodian's home if there's a cold snap. Have educated everyone in a "lights off" policy.

☛ On athletic trips, parents are asked to pay half the cost of transportation.

☛ Ordered nine new buses instead of 11.

☛ Facility upgrades have been cut or put off and projects speeded up.

☛ Every school budget got an arbitrary cut of 10%.

Dr. Forrest White, Budget Director at the **Norfolk Public Schools in Virginia**, found some real savings in insurance and employee benefits, e.g., 650 people dropped out of the medical plan because they were already adequately covered by a spouse's insurance.

By carefully examining the IRS position on Section 125, a way was found to reduce payroll taxes by 25%.

When driver's ed was run by a teacher, it cost $40,000 a year; by setting up a program with part-time outside professionals it cost only $8,000 a year.

By buying good used cars instead of leasing new ones, the district is saving $60,000 a year. Also found savings in automating library systems, using CD-ROM.

Converting from oil to gas saved money, but bypassing the local gas company and buying direct will save even more. Also, four-day summer-school week provided huge savings plus motivated students who got a three-day weekend.

Revamped the phone system. Hired their own installer and replaced rental phones from phone company ($78 a year) with rebuilt touch-tones ($35 one-time cost). Program paid for itself in a year and resulted in upgrade of intercom and better service.

Doing the same with copy machines. Prefer doing their own maintenance, saves money and lengthens copier life.

"You just have to **keep looking, analyzing, reevaluating**," says Dr. White.

That's also the attitude of Melvin Greaves, Chief Financial Officer of the **Anchorage School District in Alaska**, where the problem is a bit different. ("When times were good, we spent money on things that now have to be maintained.")

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THEM'S AS HAS, GITS!

According to the National Household Survey, the less educated are least likely to pursue adult education.

Employed adult males are more likely than unemployed males to be enrolled in adult education.

Adults with some college have higher enrollment rates than adults with none.

Most common occupations: managerial, executive, administrative, technical support.

Most likely to be in adult education are middle-aged, affluent, white, married or single.

Least likely are divorced or widowed with children at home.

Schooling	Pct. in adult education in past year
Bachelor's or higher	52%
Associate's degree	49%
Some college	39%
Vocational school after HS	32%
12th grade	22%
9th to 11th grade	14%
Less than 8th grade	7%

DISPATCHES

Continued

Prominent black publisher Claude A. Mayberry, Chairman of the National Council on Educating Black Children, notes improvement of education can begin immediately by limiting TV and giving more homework. Other needs: help parents provide a better environment for study, core material by African-Americans in every classroom, stop indiscriminate referral of students to special-education classes.

Black Star Rising

Blacks have made gradual but significant gains in the past two decades, as measured by college-entrance exams. While average scores still fall below those of whites, their combined verbal and math SAT scores rose by 49 points in the 1980s.

Teacher Shortage in California

Despite efforts to speed training of bilingual teachers, California will have a shortage estimated at 14,000. Proposed solutions include hiring foreign-trained teachers and recruiting minority students with bilingual skills into the teaching profession.

Trading Places

In the 1970s, black students were 1.4 times more likely to earn a degree in education than white students (22.1% to 15.5%). By the beginning of the '90s, however, only 7% of black graduates earned a degree in education, compared to 10% of whites.

Low Budgets but High Scores for Private Schools for Blacks

In a study of 82 private schools catering primarily to black students, the Institute for Independent Education reports above-average scores despite low budgets, substandard facilities, and teacher salaries well below the norm.

COACHING UPS S.A.T. SCORE

Coaching can raise SAT scores by as much as 100 points, says a report by the National Center for Fair and Open Testing, also called FairTest, a not-for-profit group in Cambridge, Massachusetts.

On the other side of the controversy, the College Board, which administers the test to more than 1.5 million students each year, and the Educational Testing Service, which designs the test, insist that cramming and drilling do not reliably improve test scores and may even detract.

FairTest contends that since coaching courses offered by such companies as Princeton Review or Stanley H. Kaplan Educational Center cost more than $500, students who can't afford such fees are put at a disadvantage, particularly since many contend SAT questions are already weighted in favor of the higher-income families.

THE STATES CONSORTIUM FOR IMPROVING SOFTWARE SELECTION
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TESS
THE EDUCATIONAL SOFTWARE SELECTOR
UPDATE
EPIEgram The newsletter of systemic change.

Technology & Teaching CD-ROM:

Your Prologue to Multimedia

by
Richard Wenn

Sometimes learning how to use educational technology can be frustrating. By the time you learn how to use a new technology in your classroom a new and "better" technology is on the market.

By 1970 the Media Center was incorporated into many schools–a place filled with projectors, tape recorders, cassettes, and film strips. In the eighties, educational computing seemed to eclipse the media center. As we enter the nineties, the new allure of multimedia technology is enticing trailblazers to hook their computers up to Hi8 video systems, MIDI music systems, and laser discs. By merging this technology a producer can create a dynamic interactive presentation. Think of it as a desktop media center.

This media merger that is being called multimedia will change the way we do business, learn, and have fun. The technology will be so pervasive in the future, that individuals (your students) who have the skills to use this new media intelligently will have a tremendous advantage. If our nation's citizens are not provided with these skills, our country will be at a severe disadvantage in the international entertainment and information marketplace.

The separate technologies in use today all connect with cables; but as the market grows, a single digital media device

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GETTING STARTED-TESS

The Software Connection

(As we go to press, several states are about to join the five already in States Consortium for Improving Software Selection. A common thread seems to run through their stories: that dedicated individuals can and do make things happen.)

As new learning technology increasingly finds its way into the classroom, the ability to choose the right software has become one of the most pressing problems facing educators. Some states have their own evaluation programs but these can review only a fraction of available software and might very well be evaluating software which has already been reviewed. And the evaluations can't easily be sharedwith states which have no such programs and where there is a lack of information and coordination.

Indeed, no one state or organization has the resources and the time to evaluate properly the flood of educational software. New programs arrive at a rate of 150-200 per monthand of the nearly 11,000 entries in The Educational Software Selector (TESS), the searchable electronic database available to Consortium members, only about 4,000 programs have been evaluated by anyone at all.

(Part of the problem is that the same programs, perhaps because of the promotional push behind them, get more attention and multiple evaluations whereas others are neglected entirely.)

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7 EASY STEPS TO SOFTWARE SELECTION

While it may appear intimidating at first, software selection responds to an orderly, systematic approach. By using TESS, whether the full electronic version or the abridged, print version, *The Latest and Best of TESS*, the educator not only selects software economically and efficiently, but, most important, responsibly.

EPIE Institute recommends the following seven-step method for "responsible" decisionmaking, so that guesswork can largely be eliminated.

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CONSORTIUM NEWS FROM MICHIGAN

by
Barbara Harper

Early in the school year, Genesee ISD, Office of Education and Learning, sponsored a statewide TESS User's Conference entitled "Strategies for Increasing TESS Use in Your District." It was attended by 45 key representative from Michigan user sites.

Speakers included Rachael E. Moreno, Associate Superintendent, Office of Education and Learning, Genesee ISD; Dr. Deb Small, Technology Consultant, Michigan Dept. of Education, and William Deacon, Systems Analyst, Genesee ISD. A testimonial to the usefulness of TESS

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CONSORTIUM NEWS FROM MICHIGAN

Continued

was given by Brenda Toodle from Detroit Public Schools who noted her own and others' enthusiasm for TESS and that as the word about this resource spreads, requests for searches were increasing daily.

Among the strategies discussed were:

"Inform-Inform." Stressed the need to give presentations and hands-on demos to superintendents, principals, teachers, librarians and other staff. Since this is a new and unexpected service, it has to be promoted at every opportunity.

"Try It, You'll Like It!" Get others to start searching by software name, by supplier, by computer type. Once they see how fast it is, they're hooked.

Newsletter. Articles in the school newsletter should intrigue with anecdotes about problems solved through software searches done on TESS; include tear-out search-request form and whom to contact.

In-Service Session. Offer a series of one-hour, hands-on, in-service training sessions at convenient times, with particular attention to those who want to get involved but who are intimidated by technology.

Attendees generally agreed that conferences of this sort were essential to their own understanding and motivation. Of particular importance was being able to learn from one another and to appreciate the long-term impact PC-TESS will have on education in Michigan. "The Latest & Best of TESS" got high marks.

Two conferences with major TESS presentations are scheduled for early 1992, both at the Amway Grand Plaza in Grand Rapids, Michigan.

February 3: "Using Tomorrow's Technology Today," sponsored by MIEM.

March 12: Michigan Association for Computer Users in Learning (MACUL).

Indiana, the newest member of the Consortium, recently sent a representative from Purdue University to visit the Office of Education and Learning, Genesee ISD, to learn firsthand about Michigan's successful and rapid introduction of TESS statewide.

EDITOR'S NOTE. *Barbara Harper modestly fails to report her own contributions to the success of TESS in Michigan. With the strong support of Assistant Superintendent Rachael Moreno, Ms. Harper has tirelessly criss-crossed the state, proselytizing, cajoling, demonstrating, advising, remaining cheerfully optimistic, despite the backache she got from lugging a 20-pound "transportable" computer.*

"The moment of truth comes," she says, "when I ask how long they have been searching for a particular kind of software. Often the answers are weeks or months. When I show them that TESS does it in seconds, they get excited!"

SEVEN EASY STEPS TO SOFTWARE SELECTION

Continued

STEP I: ANALYZE NEEDS

While there is an understandable impulse to start looking at programs, you should think first about how you want to integrate software into your curriculum and why.

Once that is established, carry out a needs analysis to clarify which of your needs can best be met with computer software.

STEP II: SPECIFY REQUIREMENTS

It is recommended that you write a clear, full "spec" of the courseware you are looking for, incorporating the needs identified in Step I.

STEP III: IDENTIFY PROMISING SOFTWARE (FIRST CUT)

Use TESS to identify software that, by description, appears to fulfill your "spec." TESS also will allow you to focus on software that is available for preview and that has received positive reviews.

STEP IV: READ RELEVANT REVIEWS

Read evaluations and other in-depth reviews cited in TESS (from more than 40 sources) to narrow your list of promising software. These references appear at the end of each software entry.

STEP V: PREVIEW (BY TEACHERS AND WITH STUDENTS)

Teachers should observe students using the software and judge results against good teaching practice. Because courseware is interactive and students respond directly to it, there is little opportunity for teacher mediation to compensate for poorly-designed materials.

STEP VI: MAKE RECOMMENDATIONS

Following the preview, create a written record explaining recommendation, for or against. If positive, include any observations during preview which will be useful when software is used.

STEP VII: GET POST-USE FEEDBACK

Get both student and teacher reactions and keep with software so future users can benefit. Use this evidence to improve school's overall selection of software.

SUMMATION:

Because of the huge quantity of educational software available (in addition to the 11,000 entries in TESS, another 150 to 200 new programs arrive monthly) the prospect of choosing the best software is a daunting task, even overwhelming without good information readily available.

However understandable, there is a regrettable tendency to stick with the most highly-rated programs, which constitute only about 10% of the thousands available. The trouble with this is that only about 4 in 10 programs ever get responsibly reviewed; a great deal more work and coordination has to be done in this area. (One of the functions of the States Consortium for Improving Software Selection is to encourage the sharing of knowledge about software among the states.)

The TESS IN-BASKET

The IN-BASKET, a new monthly feature in EPIEGRAM, will bring to our readers the latest educational software programs compiled by TESS (The Eductional Software Selector), EPIE Institute's massive (more than 11,000 entries) database. Also, when reviews are available, it will indicate which programs are the most highly rated.

With between 150 and 200 new software titles published every month, keeping abreast is a daunting task, even for TESS, the most complete database available.

This tidal wave of new products can overwhelm the educator; but with TESS, all the pertinent information needed is instantly available.

For Consortium states, the electronic database is updated twice yearly; for those who depend on the print edition of *The Latest and Best of TESS*, new programs are added to each annual edition. By subscribing to EPIEGRAM, the educator is now updated monthly on the very latest programs published.

MATH

GEOMETER'S SKETCHPAD
Key Curriculum Press, Berkeley, California
Mathematics: Geometry
Grades 7-12
Experiment with shapes and angles. This program allows the user to construct and manipulate various figures to see how the geometric measurements change accordingly.
Macintosh Plus or better: $169.95

KOETKE'S CHALLENGE
W.K. Bradford, Acton, Massachusetts
Math: Probability
Developed as part of the TIMS-TERC Investigation in Math series, this program engages the student in developing strategy and prediction skills.
Apple II computers: $60

SUPER SOLVERS OUTNUMBERED (Macintosh version)
Learning Company, Fremont, California
Mathematics
Ages 7-14
New Macintosh version offers the same entertaining and problem-solving program as the DOS version. As students solve mathematical problems, they gather clues with which to identify the whereabouts of the Master of Mischief.
Eight levels of difficulty.
Macintosh: $59.95

WEEKLY READER FRACTIONS & DECIMALS WORD PROBLEMS
Optimum Resources, Norfolk, Connecticut
Mathematics
Grades 3 and up
This program provides hundreds of word problems designed to help students develop reasoning and math operations skills. 25 skill levels.
Apple II: $49.95

WHAT'S MY ANGLE?
Davidson and Associates, Torrance, California
Math: Geometry
High school to adult level
Promotes basic geometry skills and concepts by employing "real life" applications and entertaining activities. Comprises five components: Geoboard, Geolife, Geoproofs, Geoconclusions, and Geogolf, all designed to teach geometry skills and theorems through games, simulation, and problem solving.
MS/PC-DOS: $49.95; $59.95 for Teacher's edition; $149.95 lab pack

ENGLISH/LANGUAGE ARTS/READING

EDITOR (4.0)
Modern Language Association, New York, New York
Program designed to check mechanics, usage, and vocabulary of writing input into the computer. The program does not correct a student's work but points out the possible problems in usage and style. This analysisis provided to the student in a printout or a disk file rather than on-screen with the analyzed work; thus the student can see patterns of problems and can revise or correct them.
MS-DOS: $45

QUOTEMASTER PLUS
PennComp, Houston, Texas
English: Composition, Speech, Communications
Program allows users to retrieve quotes and anecdotes which may be incorporated into speeches, papers, etc.
MS-DOS and Macintosh: $89-$250, depending upon features and number of databases.

READER RABBIT 2
Learning Company, Fremont, California
Reading
Preschool-Primary: ages 3 to 7
This new version follows the same format as its predecessor, taking youngsters on an adventurous train ride through "Wordville." The program develops reading skills, alphabetizing, and phonetics. Addresses over 1,000 vocabulary words selected from primary level reading curriculum. One to four skill levels may be selected.
MS-DOS and Tandy: $59.95

SPECIAL WRITER COACH
Tom Snyder Productions, Cambridge, Massachusetts
English: Writing, Composition
Primary grades

This writing program requires a cooperative effort by the teacher to help the student formulate ideas for writing. In this three-stage approach, teacher asks questions and inputs the student's responses in an effort to free the student to cultivate thinking. A teacher-selected set of prompts then guides the student as the story is reviewed and edited by the student. Greater focus is given to content than mechanics.
Macintosh: $59.95; lab pack, $179.95

STUDENT'S DREAMTOOLS
(Also *Writer's Dreamtools*, an expanded version for adults)
Slippery Disks, Los Angeles, California (producer)
Helzer Software, Pleasant Hill, California (supplier)
Called by its producer "Instant Research," the student version offers an almost limitless array of information in three HyperCard stacks: Events Day-by-Day, Stack of Lists, and Stack of Decades (Slang Thesaurus and Cliches and Catch Phrases available in Writer's Dreamtools only). Helpful in spicing up one's writing, this program contains information on every decade dating to 1650 and in virtually every category, from art to zoology.
Macintosh: $89 student version, $129 adult version

SUCCESS WITH WRITING
Scholastic Software, Jefferson City, Missouri
English: Writing, Composition
Grades 7-12
Program takes the student through the writing process. Assisting with each step, the program helps to plan and organize an idea, outline and prepare a draft, and edit the finished work. Forms of writing include: descriptive, comparative, persuasive, and explanatory.
MS-DOS, Macintosh Plus, Apple II: $99.95

THE WRITING CENTER
Learning Company, Fremont, California
Publishing Software
All grades
A tool for newsletters, reports, flyers, and other documents. The program offers word processing, advanced page-layout features (with columns and graphics), and uses all Macintosh fonts.
Macintosh: $129.95; lab, $249.95; network, $699.95; site license, $999.95

SCIENCE

BALANCE OF THE PLANET
Chris Crawford Games, Milpitas, California
Science: Ecology
Grades 8 - 12
What are the implications of certain actions upon the environment and the economy over the next 50 years? This simulation program provides an opportunity for students to find out. Students are challenged to make decisions and propose solutions to problems as they manage society to an ecologically and economically sound future.
MS-DOS, Macintosh: $59.95

COMPUTER BIOLOGY LABS:
EARTHWORM, CRAYFISH, CLAM, STARFISH, PERCH, GRASSHOPPER, FROG
(Series of seven disks)
Cross Educational Software, Ruston, Louisiana
Science: Biology
Designed for first-year biology study, primarily grade 10
Each disk in the series addresses the anatomy of the organism and the process of dissection. May be used to enhance labwork or to serve as an alternative to actual dissection.
Single package: $29.95; Series, $190
All packages available for Apple II; Earthworm *and* Frog *for MS-DOS*

EARTHQUEST EXPLORES ECOLOGY
Davidson and Associates, Torrance, California
Science: Earth Science, Ecology
Grade 5 to adult
Provides 16 interactive games and six biosphere simulations that help the student focus on the earth's environment. Requires hard disk.
Macintosh Plus, Mac Classic, or better: $59.95

ECO-SAURUS
Davidson and Associates, Torrance, California
Science: Ecology and Environment
Ages 4 to 8
Encouraging students to recycle, this simple game program asks the youngster to collect a variety of recyclable items, such as aluminum cans, resulting in the completion of a spaceship.
MS-DOS: $39

FIELD TRIP TO THE RAINFOREST
Wings for Learning, Scotts Valley, California
Science: Ecology and Environment
Grades 2-8
Students journey through a tropical rain forest, studying the plants and animals that live there. Day/night feature allows students to see changes that take place. The software is accompanied by a book, which can be used as background or reading material.
Macintosh: $99; Apple II: $79

THE GREENHOUSE EFFECT
THINKING OF THE OZONE LAYER
Full Circle Media, San Raphael, California
Science: Ecology and Environment
Grades 6-12
Both programs provide students with information in different media, including text, graphics, charts, animation, and videodisc clips. Topics include

cause and effect and review of scientific investigation.
Macintosh: price not available

MURPHY'S MINERALS
MECC, Minneapolis, Minnesota
Science: Earth Science, Geology
Grades 5-9
A program designed for mineral identification, Murphy's Minerals offers students an opportunity to apply standard geological testing procedures and tools. As miners, they also tunnel through various fields in an attempt to locate valuable minerals. Several skill levels are offered and this program fosters problem-solving skills.
Apple II: $59.95

SUGAR SCIENCE
The Sugar Association, Washington, D.C.
Science: Biology
Grades 4-8
Students use this software to help them manage experiments focusing on photosynthesis and the role of sugar in food production. The program also offers glossaries of related terms and review questions.
Apple IIe/gs, Macintosh, IBM: $39.93

3-2-1 CONTACT: WILD THINGS
Wings for Learning, Scotts Valley, California
Primary: Grades 3-6
A challenge game. Requires students to apply logic and strategy as they explore information about numerous plants and animals. Software is accompanied by "Guide to the Wild,"which provides additional information to help the student find answers.
Apple II: $65

SOCIAL STUDIES

GALLEONS OF GLORY
Broderbund, San Rafael, California
Social Studies: History, Geography
Grades 4-12
Explore the world and try to survive upon the open seas. Students become the captain of the ship, commanding the crew through challenging adventures and a successful completion of the mission.
MS-DOS: $54.95

HEADLINE HARRY AND THE GREAT PAPER RACE
Davidson and Associates, Torrance, California
Social Studies: Modern History, Current Events, Geography
Students work as reporters for the US Daily Star. As they work to scoop the rival Diabolical Daily, they learn about true-life events from 1950 to today, which have taken place all across the United States.
MS-DOS: $59.95

MACGLOBE
PC Globe, Tempe, Arizona
Social Studies: Geography
Helps students learn important information about 190 countries, including topography, geography, population, economics, and national characteristics.
Macintosh: $79.95

THE VIETNAM WAR
Regeneration Software, Scotts Valley, California
Social Studies: History
Chronicles the history of the Vietnam War, including news clips, maps, and interviews with veterans. Utilizes HyperCard stacks and is designed to be used nonsequentially.
Macintosh Plus or better: $29.95

WAGON TRAIN 1848
MECC, Minneapolis, Minnesota
Social Studies: History
Grades 5 and up
Students travel across the country in wagon trains, having to select a leadership that will govern and guide them on their journey. The program encourages students to make important choices to ensure a successful and safe passage, much in the way pioneers traveled during this time in America's history. Designed to work with AppleTalk, this program networks computer stations, with each station designated a "wagon" on the train, and enables students or small groups to communicate about their journey via the network.
Macintosh on an AppleTalk network: $199 (5 stations)

EARLY LEARNING

KIDWARE 2 LEARNING CENTER
Pre-K - Grade 1
This integrated program for early learning skills provides assorted activities for young children. They discover new ideas and concepts using the Electronic Easel, Music Maker, Face Maker and more. Students are assisted by a voice prompt (which can be programmed in languages other than English). Teachers may select from several skill levels to accommodate the varying progress levels of young children.
MS-DOS: $1,195 (for two stations)

MICKEY'S JIGSAW PUZZLE
Walt Disney Software, Burbank, California
Early Learning
Fifteen puzzles of varying skill levels. Provides youngsters the opportunity to select from four to 64 pieces as they attempt to complete the puzzle. Animation and sound.
MS-DOS version: $49.95; $69.95 with Sound Source audio support.

PUPPETMAKER
PUPPET PLAYS
Sunburst, Pleasantville, New York
Grades: primary
To enhance storytelling and imagination, *PuppetMaker* can be used to show students how to make a variety of character puppets: paper bag, finger, walking, and shoebox puppets. *Puppet Plays* helps teachers and students move smoothly from an initial idea for a play to its opening. Covers steps in playwriting and offers ideas for creating puppet stages and designing puppets.
Price: not available

TIME MASTERS
Bright Ideas Software, Fremont, California
Early Learning: Time
Ages 5 and up
Teaches students 13 basic time concepts, including analog and digital time, minutes before and after the hour, days of week, months of year, seasons, and holidays.
Macintosh: $39.95

MISCELLANEOUS

DECISIONS, DECISIONS: THE ENVIRONMENT
Tom Snyder Productions, Cambridge, Massachusetts
Interdisciplinary: Ecology, Economics, Political Science
Grades 5-12
A simulation program that encourages thinking skills. Decisions, Decisions requires students to make choices to address the pollution problem in the local town pond. These choices involve setting economic, political, financial, and ecological priorities. Program may be used with whole class or in small groups.
Apple, Macintosh, IBM or compatibles: $119.95; lab pack, $199.95

GRADE MACHINE
Misty City Software, Kirkland, Washington
Gradebook Software
Designed like a manual gradebook, the program allows users to enter, edit, or review student assignments and progress. Generates reports for individual students or the entire class.
Macintosh: $74.95; Apple II, IBM and compatibles: $59.95

MAKE TEST
Mountain Lakes Software, San Francisco, California
Test-Creation Software
This program is being distributed as part of a package with the Macintosh Classic, LC, and IIsi computers under Apple Computer Company's Educator Advantage Program. For more information, contact Mountain Lakes Software.

PERFECT PRESENTATIONS
Desmond International, Boston, Massachusetts
Tool Software
An add-in to WordPerfect 5.1, this program enhances the popular word-processing software by adding graphics capability. Program integrates the two applications; users do not have to exit the word-processing program to utilize the graphics features.
$95

SUPER MUNCHERS: THE CHALLENGE CONTINUES!
MECC Software, Minneapolis, Minnesota
MECC offers another program in the popular Munchers series. Designed to develop problem-solving skills by employing over 4,000 facts in over 130 categories.
MS-DOS and Macintosh: $49.95

TREEHOUSE
Broderbund Software, San Raphael, California
Interdisciplinary
Primary grades, ages 6-10
A sequel to the popular *Playroom* (for ages 3-6), *Treehouse* encourages students to devise strategy and develop deductive reasoning skills. Surprises arise as the student engages in various activities with 'possum playmates.
IBM PC and compatibles, Tandy: $69.95; $139.95 lab pack (Macintosh and Apple II versions available in early 1992)

ART & MUSIC

KIDPIX
Broderbund, San Rafael, California
Art, Paint Program
Preschool to grade 6
Designed for very young children, Kidpix is an entertaining and innovative paint program. It offers easily recognizable icon symbols, an atypical "Wacky Brush" drawing tool, a "Rubber Stamp" feature of pictures and borders, and other "goodies." The program also provides sound effects and a talking alphabet, available in English or Spanish.
Macintosh: $69.95; lab pack, $139.95

RHYTHM ACE
Ibis Software, San Francisco, California
Music Education
Students learn about music notation and note values, tempo, time signatures, and other skills. Provides user feedback. In addition to the keyboard or mouse, students may also utilize a MIDI instrument to input.
IBM and compatibles: $99.95

FOREIGN LANGUAGE

EASY KANA: WRITING AND PRONUNCIATION
HyperGlot Software, Knoxville, Tennessee

GETTING STARTED

Continued

Recognizing that a lack of pertinent information is hampering their efforts to bring technology into the classroom, state education agencies are turning to the States Consortium for Improved Software Selection (SCISS). States license the TESS database from EPIE Institute, which manages both the Consortium and TESS, for an annual fee which diminishes as more states join the Consortium.

Consortium members get the TESS database on masterdisks which the state agency copies and distributes to any school, college, school library, or other educational agencies within the state, both as standalones or networked. A smaller print version, *The Latest and Best of Tess*, 1991-92 edition, is also available for schools which have not yet acquired computers with a large enough hard disk (30 MB required) to hold all the data.

One of the reasons more states have not joined the Consortium already is that even under the best of circumstances, the approval process at the state level can consume a considerable amount of time. Further, with budgets being scrutinized carefully, there is always the problem of finding the $25,000 first-year fee.

Some states have found it simpler to get support from an outside organization and then, once the TESS database has proven its worth, fund it through official sources. In Michigan, for example, the Genesee Intermediate School District in Flint wanted the database to be available as quickly as possible. They approached the Mott Foundation, made their case, and within little more than a year had the database in place in 100 school districts. (SEE "NEWS FROM MICHIGAN")

Texas went a different route. The Texas Education Agency made the commitment at all levels and is providing enough money, staff and resources to put the TESS database into every one of its more than 6,000 schools.

According to Nancy Vaughan, Divisional Director of Technical Development at the Texas Education Agency, the product will be made available in three ways: on a statewide network, on disks, or in print; the schools, themselves, decide which they want. Training at the school level is being handled by the Education Service Centers. The question where physically to place the database is also a local option but most schools will probably keep it in the library.

The Texas total committment is somewhat unique among Consortium members thus far. While many educators in non-Consortium states have indicated a desire to have TESS available, the process of gaining acceptance at the state level can be slow. Part of this is due, of course, to the inertia of any new organization; it takes time to provide demonstrations.

To help bring TESS to the attention of educators in non-Consortium states, there is a new policy whereby selected schools will be able to obtain limited access to TESS for a fee, plus an agreement to demonstrate it for other educators. (SEE STORY, PG. 1)

Experience shows that each state will tend to approach membership in the Consortium in a different fashion. In New York, for example, the initial funding came through BOCES; in Indiana, Purdue University, wanting to use TESS for teacher training in its College of Education, speeded up the process by providing the initial fee.

Since the cost of maintaining the TESS database is expected to remain fairly constant, licensing fees will be reduced each year as more states join. As the Consortium grows, information on other educational materials such as video, video disc, and CD-ROM will be added.

"The objective," says Ken Komoski, "is to provide every decisionmaker with all the information necessary to make intelligent buying decisions. The promise of information technology is that the decision-making process can ultimately be moved down to the individual teacher so students can get educational materials that fit directly with the curriculum."

The TESS In-Basket

Continued

Foreign Language: Japanese
This HyperCard-based software focuses on the Japanese writing systems of Hiragana and Katakana (Kana). In addition to the animated writing feature that introduces the student to the various Japanese characters, the program also employs sound so that a student can hear the correct pronunciation by a native speaker.
Macintosh: $99

TRANSPARENT LANGUAGE
Transparent Language, Hollis, New Hampshire
Foreign Language: French, Spanish, German, Latin
Builds upon the concept of whole-language reading, whereby students read native classic literature, rather than focus on discrete reading or grammar skills. Series of windows helps students to translate the text they have read and provides information on grammar and parts of speech.
MS-DOS version: $95 (four titles). Additional titles: $12.95-$19.95

ENGLISH AS A 2ND LANGUAGE

ENGLISH AS A SECOND LANGUAGE
Educational Publishing Concepts, (800) 372-3277
Grades 2 - 12, adult
This four-set series presents "real life" situations and employs a whole-language approach to the study of English as a second language. Over 150 lessons are included. Sound and various skill levels.
Apple II: $400

BILINGUAL READING COMPREHENSION
Educational Publishing Concepts, (800) 372-3277
Grades 1 - 3
With this program, teachers may select the primary language of English or Spanish and present the student with up to 36 stories to encourage reading-comprehension skills. Teachers may also select varying levels of difficulty.
Apple II, IBM: $199.50

"True Believers"
Continued

Under the new policy, EPIE, which manages SCISS, will provide an individual school or district with a copy of the electronic TESS database for $500 per building. Use is strictly limited and, unlike in member states, the disk cannot be copied or networked.

"There are two reasons for this relaxation of rules," says Pat Lutzky, Manager of the Consortium. "For one thing, we know how valuable the database can be and we want to help those who recognize this." Because state agencies can't move as quickly as local schools, membership in the Consortium can be delayed for months. It is terribly frustrating to the educator to know there is a valuable tool such as TESS and not have access to it. This solves that problem. When the state finally joins the Consortium, the school or school district comes under that contract and will have unlimited access to the database, on disk or network. Equally important, Ms. Lutzky pointed out, is that the Consortium is actively seeking new members. With limited marketing resources, it wants to get the TESS database into non-Consortium states where it can be demonstrated by educators who have taken advantage of this offer. As she noted: "The Consortium has grown because of a band of 'True Believers,' educators who recognize that TESS is unequaled as a source of essential information. By making TESS more widely available, we will create more believers and the Consortium will grow more rapidly."

As satisfied users of TESS in the Consortium states can testify, the only way to understand the speed and efficiency of choosing software by using TESS is to see a hands-on demonstration. Any school or district accepting the Consortium's offer will be expected to provide occasional demonstrations for other educators.

"The Consortium has made major progress in a very short period of time," says Ken Komoski, Executive Director of EPIE Institute, "but the need for information which only TESS can supply is so great we are understandably eager to enlarge the Consortium as rapidly as possible so more educators can benefit."

For further information on this special offer, contact the Consortium Manager, Pat Lutzky, or the Executive Director of EPIE, Ken Komoski, at 516 728-9100, or fax inquiries to SCISS, c/o EPIE Institute, 516 728-9228.

FYI:

Consortium Can Help Spring Bucks for You

EPIE Institute, which manages the States Consortium, is exploring ways to get support from national companies, particularly in the telecommunications field, to expedite membership in SCISS.

CD-ROM
Continued

will become the standard. Once this standard device gains a dominant market position, it will be as common in our lives as microwave ovens and VCRs are today. The development of this standard device is so important that corporations such as Apple, IBM, Sony, Philips, Polygram, Mitsubishi, and United Artists are positioning themselves with the hope that they will be technology leaders in our multimedia world.

It is easy to get your students started. Set your computer up with a CD-ROM player and begin exploring your world through a new vessel. CD-ROM products can be inspiring. You can use CD-ROM to learn more about agriculture, art, chemistry, international law, music, U.S. history, and world geography.

Can your school afford to buy and use a CD-ROM player? Assuming you already have the computer, getting started with CD-ROM is going to cost between $500 and $1,000. The actual cost will depend on which unit you purchase and what titles you need. Next month I will provide you with a review of popular CD-ROM drives and offer advice on choosing and purchasing a CD-ROM player.

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FYI
Continued

"Once we have a rallying point in a state," says Pat Lutzky, "we can help find private sources for the first-year fee." Ms. Lutzky noted that the Mott Foundation provided key funding in Michigan and that a number of foundations have been approached in other states and approvals are expected early in 1992.

SCISS Welcomes Non-Members

Non-members are welcome at annual meeting of the State Consortium for Improving Software Selection (SCISS) to be held in Atlanta on January 25th. The meeting will coincide with the break between the two sessions of the IBM Educational Systems School Executive Conference (January 21-29).

The SCISS meeting, to be held at the Stouffer Waverly Hotel, 2450 Galleria Parkway, will begin at 1:00 p.m., with a coffee break between 2:00 and 2:30.

The informal part of the meeting, to which educators from non-Consortium states are invited, will begin at 2:30 and will feature demonstrations of the TESS database and presentations from Consortium members on how to launch TESS, and how to train and motivate.

SERV, a federally-funded regional education laboratory in the Southeast, has indicated it will attend, along with representatives from the half-dozen states SERV serves.

Anyone wishing to know more about the meeting or general information about the States Consortium for Improving Software Selection (SCISS) should contact Pat Lutzky at EPIE Institute, 103-3 West Montauk Highway, Hampton Bays, New York 11946. (516) 728-9100.

(EPIEGRAM will publish highlights of the meeting.)

"V&R" VIEWS AND REVIEWS

Hype Not Equal to The Hope

"HOOKED ON ADVERTISING" is the way the San Francisco *Chronicle* summed up "Hooked On Phonics," noting the company (Gateway Educational Products) is spending more money on radio and TV than such well known names as Alka-Seltzer, Gillette or J.C. Penney.)

Educators have been unanimous in criticizing the product. The International Reading Association reviewers felt "Hooked" couldn't be used alone, as the advertising says, because the readers would not know if they are decoding words in the workbook correctly, and the program emphasizes sounds, not meaning.

Whole-language advocates consider it too limiting, that phonics is not enough, and that this kind of instruction is completely divorced from reading comprehension. Gateway's response: that's what dictionaries are for.

Hooked on Phonics came into being because CEO John Shanahan, a former musician, helped his son to read by linking reading with music. We note that the company has toned down its claims of late, but it is still advertising *allegro*. There are some advocates, such as Sister Nancy McNamara, a nun who teaches second grade in a public school in the Bronx. Appalled at her students' poor reading skills, she sent for a kit and found it worked so well for her class she has gone on TV as a very believable convert.

EPIE's ANALYSIS: EPIE'S biggest objection is one of truth in advertising. It says the user will learn to read but by the accepted definitions of reading, i.e, understanding, "Hooked" doesn't do what it says it will do. Does it work? Not by itself. Phonics and words are but a first step in learning to read. Of course, in the hands of a good teacher, anything systematic can be made to work.

If it build false hopes, should that be considered unethical? Very likely. But, then, a school that graduates a student who can't read also has an ethical problem — and will have spent a lot more than $179.00.

K.K.

The Education of Little Tree

It sounded too good to be true ("The captivating story of an orphaned Cherokee boy raised by his grandparents, from whom he learns the simple moral ethics of living") and, alas, it wasn't, at least not entirely.

Winner of the ABBY Award in June 1991, there is little doubt of the book's appeal, and it will survive. The publisher has taken off the "True Story" label, the New York *Times* has moved it from nonfiction to fiction on the best-seller list. Life goes on.

According to the publisher, the University of New Mexico Press (well known for its emphasis on Indian themes), the presentation of fiction as fact was due more to inadvertence than any effort to perpetrate a hoax. As the late author's wife and others have noted, all the important facts in the book are true.

So, alas, is it that Forrest Carter (real name Asa Carter) committed some youthful indiscretions such as writing speeches for George Wallace and flirting with Klan-related groups.

So we are left with a work of art created by an imperfect human being. If Carter had devils, they don't show up in the book. Which is about all we can ask.

Stock Questions

Kids Book of Questions, *by Gregory Stock, Ph.D. Workman Publishing, New York, 1988 (208 pg., softcover). $4.95.*

The *Book of Questions* is designed to help kids focus on what they believe about issues and themselves. Book is for kids, but questions not childish, reflecting problems of the times - divorce, abuse, ecology, drugs, relationships.

Tone: Avuncular.

Tells them: Knowing what you believe in and who you are is important. Don't be afraid to form your own opinions. Explore your feelings; don't cheat by avoiding them. Learn how to make decisions. Stand by them. While there are definite rights and wrongs, life is rarely a simple yes or no.

Sample questions (260 total):

45) If you could change one thing about your parents, what would it be?

60) Which subjects at school do you think are useless? Which are important?

111) If your parents lost their jobs and you had to help support your family, what sorts of things would you do to earn money?

114) How important is it for you to win? When was the last time you cheated in a game so you could win?

133) What do you think your friends like most about you? If you lost that quality, do you think they would still like you?

147) Are you worried about what kind of place the world will be when you grow up? If so, what worries you most and what do you think can be done to improve things?

196) If for one day, you could do absolutely anything you wanted and not get caught or punished, what might you do?

205) Do you believe in God? If not, why do you think so many people believe in him? If so, what do you believe God does all day?

222) If you were allowed to stop going to school, would you?

228) If something happened to your parents and you had to live with someone else for two years, who would you most like to live with?

234) Would you lie to protect a good friend if you knew he had stolen something from a neighbor and your father asked you what you knew about it?

250) If you knew that by never again eating junk foods or candy, you would live until age 75 rather than 60, would you give them up?

EPIE ANALYSIS: Once upon a time families talked about serious moral, ethical and social concerns. Some still do, and for those who want to begin the dialogue, this is a very useful book.

P.L.

Views and Reviews

Continued

Multimedia Jasper

The Adventures of Jasper Woodbury, *developed by Learning Technology Center, Peabody College, Vanderbilt University, Nashville, Tennessee. Major funding from National Science Foundation and James S. McDonnell Foundation. Series adopts NCTM (National Council of Teachers of Mathematics) standards. For fifth and sixth grades.*

Innovative project comprising video series (four produced thus far), print, and optional computer resources. Overall goal: to promote awareness and judgment (cognitive) skills. Objectives:

- *to place greater emphasis on complex and open-ended problem-solving;*
- *connect math to other subjects (science, history, geography, liberal arts);*
- *promote a dialogue about math;*
- *apply real-world context; and to*
- *make problems interesting.*

Story focuses on the Jasper character and his friends (played by actors) and their quite believable adventures. The story line provides clues, some subtle, which students must use to solve problems. Requires good listening skills.

For example, in the first video, "Journey to Cedar Creek," Jasper sails to Cedar Creek to buy a used boat and motor and runs into various situations which require planning, problem formation, and problem solving. E.g., when the motor breaks down, Jasper has to figure out how to get it repaired, must calculate distance and gas consumption, as well as time and approaching nightfall, and must consider troubles he may face from the weather.

There are multiple solutions and teachers are advised to encourage alternative approaches. Already used by 16 schools in nine states, the response is positive.

EPIE ANALYSIS: We would urge the use of the print and computer resources to give more substance to the video presentation.

P.L.

Free Help for Helpful Parents

"Helping Your Child Learn Science," 16 activities for children 3 to 10, plus list of recommended science books and magazines for children. Free from: Department 611X, Consumer Information Center, Pueblo, Colorado 81009.

"Publications for Parents" also provides list of useful publications, plus ways to help child in library, to learn geography, reading, writing, and math, even in choosing schools and understanding school budgets. Not only free but also public domain and can be reproduced. Request publication #PIP 91-920 from: Department EIB, OERI, 555 New Jersey Avenue NW, Washington, D.C. 20208-5641.

Almost free: "Parental Involvement in Education," stock #065-000-00459-3, $1.50 from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-9325.

Stairway to Learning

A Bonanza of Good Grades?

After a video half hour with late TV luminary Michael Landon, and a host of educators, parents, and students—all touting the glories of "Where There's a Will, There's an A"—, even the most skeptical are in danger of becoming converts to the idea that children can be taught how to learn.

"Will" does not purport to transform a poor student into a genius. It's no magic pill but it does promise significant improvement and one begins to suspect it is possible.

The premise is that schools fail to teach students how to study, how to organize and write a paper, how to take effective notes, how to take a test. Rather, they get information in bits and pieces and are expected gradually to learn how to learn how to learn.

The difference between a good student and a so-so student, says the creator of the program, can often be traced to work habits and work skills, and the half-hour infomercial seen on commercial TV pounds this point home with a barrage of happy users: teachers, administrators, parents, and students.

Developed by Claude Olney, J.D., a father of three underachievers, "Where There's a Will, There's an A" appears to have discovered a key weakness in many of today's school environments. And given the miracle of the "unseen hand" of the marketplace, Dr. Olney may well have a winner.

EPIE ANALYSIS. We should be teaching kids how to learn as well as what to learn but we don't do a good job of it. One deterrent is the myth that textbooks and other instructional materials are already well organized so emphasis on this is redundant. Not so, says EPIE; students need to learn their own individual techniques to organize, process, and retain information, and most of them can use some help.

Thus, EPIE doesn't disagree with Dr. Olney's program that the need exists, but feels strongly that the responsibility for teaching students to be effective learners should begin with the school and the teacher. If it's not happening, then Dr. Olney's program makes a lot of sense. Certainly it has for the Randolph Middle School in New Jersey where, after testing "Will" on about a thousand students, it has been made mandatory for all seventh and eighth graders.

K.K.

One Down, Three to Go

National Geographic Society has three more specials on PBS in its current series, funded by Chevron:

"Eternal Enemies: Lions and Hyenas" airs January 22nd.

"The Mexicans: Through Their Eyes" airs February 26th.

"Braving Alaska" airs April 29th.

The first special, on Hawaii's ecosystem, aired November 13th.

Free resource guides are available through local PBS stations, or write: National Geographic Specials, c/o Chevron, 742 Bancroft Way, Berkeley, California 94710.

As Another World Turns

Black Adolescents, a compendium of essays by various experts, well-documented and generally well-written. The problems, with their upsetting statistics, get more attention than solutions because, one must reluctantly conclude, there are no easy answers.

Edited by Reginald L. Jones, Professor of Afro-American Studies at University of California at Berkeley, *Black Adolescents* attempts to redress some imbalances (e.g., the non-urban black adolescent tends to get overlooked). As might be expected when there are multiple authors, there is some redundancy; but a solid, useful book.

Continued on page 21

Educators Find Funding

Continued

Privatizing the bus system (now 60% private, 40% school-owned) has saved money. So has 5% wage rollback and self-administered workmen's comp, as well as participation in state retirement-incentive program ("Unfortunately, it also reduces the experience level.")

Encouraging employees to look for savings in their own areas. ("Little things add up.") A mechanic had an approach on fan belts which saved gas and gave longer life; someone came up with a cheaper way to get rid of hazardous materials; cutting down number of cleaning materials saved considerable sums.

Big savings to be found in budgeting accurately. Programs that run out of funds are a double waste; money not used is also a waste. The budget, says CFO Greaves, should be accurate to 1-2%.

At the ABC Unified School District in **Cerritos, California**, the approach is also total. As noted by Deborah Willard and assistant Susan Tosado, there is an emphasis on recycling. Paper is shredded and sold; plastics are recycled in the cafeteria. ("If kids learn not to waste when young, they will be more responsible adults.")

At ABC there has been no cost-of-living increase for two years; custodial service has been restructured to save personnel and other costs. Children within walking distance don't get bus service; purchasing is consolidated.

School has hired consultants (School Services of California) and gives them high marks.

Surprisingly, some schools have been relatively untouched to date. In **Fremont, Nebraska**, even though the state has provided a new spending "lid," a school spokesman did not seem unduly concerned. Past reductions in energy cost provide a cushion, and plans are afoot to set up a special fund for educational materials and technology.

In **Chinook, Montana**, the big news was not budget but a huge prairie fire that threatened the town.

In **Tucson, Arizona**, faced with deep cuts in sports and extra-curricular activities, officials instituted a pay-to-play concept ($105 for sports, $60 for band, drama, etc.). Parents initially negative; however, plan is still in effect, though fees are lower ($50 and $30) thanks to an assist from the state.

In **Los Angeles**, where salaries of teachers, administrators, and other employees

Continued on page 21

The Business of Education

EDITORIAL NOTE: Because local and national business represents a welcome source of help for schools and because business leaders at every level show an increasing concern about education and the quality of worker coming into the job market, EPIEGRAM will note emerging trends, philosophies, and opportunities at the point where business and education meet.

Year-Round Schools: Reflecting national discussions on the subject, the Texas Association of Business has proposed year-round schooling:

Plan A: six weeks of school, two weeks vacation, repeated six times a year.

Plan B: Nine weeks of school, three weeks of vacation, repeated four times a year.

Objective: better use of facilities, less learning loss during summer break. Not determined: whether to extend traditional 180 days of school. Prediction: minimal, if any, additional costs.

❦

Pizza Power: "Book It," Pizza Hut's national reading-incentive program, which rewards readers with pizzas, is expected to reach more than 670,000 classrooms in 1991-92, up by 20,000. (*Or would it be more effective to reward kids who eat pizzas with books?*)

❦

Broderbund Bullish. Broderbund Software, Inc., goes public (recent price: 21 3/4). Jostens, Inc., is reducing its 23.9% interest to just 3.7% but Douglas Carlston, Broderbund CEO, plans to hold on to his 23.4% stake. While sales increased 10.7% in 1991 (to $55.8 million), profit jumped 124% (to $7.1 million).

❦

Jostens Jumps. Jostens Learning Corporation sales jumped 33% in fiscal '91 to $160 million. Sales growth has exceeded 30% annually since company entered the educational market in 1986. JLC has more than 20 business partnerships, including IBM, Apple, Tandy, and Western Publishing.

❦

Apple Gets to the Core of Things. In its "Blueprint for the Decade," Apple is saying what is already obvious, that it no longer intends to go it alone and is actively seeking partners. In a rare burst of candor, Apple indicates it will move heavily into "multi-media players," which is to say discs, color laser printers, computers that will display and manipulate three-dimensional images, as well as voice recognition, translation, and video conferencing.

Apple's revenues for fiscal 1991: $6,309,000,000, a 14% increase over last fiscal year. Total Mac growth was up 60%.

❦

Robert Maxwell's Legacy. Harcourt Brace Jovanovich went so deeply in debt defending itself against takeover attempts by the late publishing mogul Robert Maxwell, that it never recovered. Now it is being taken over by General Cinema after a long, on-again, off-again courtship.

❦

No Problem, Says Macmillan/McGraw-Hill. A spokesperson for Macmillan/McGraw-Hill School Publishing Company and Macmillan College Publishing stressed that despite the mysterious demise of Robert Maxwell, the tales of raided pension funds and the bankruptcy proceedings of Maxwell Communications (based in the U.K.), the educational publishing companies are strong and viable units, unaffected by "recent developments," and that all work with authors, suppliers, and customers will continue without interruption and in a normal manner. Okay? Okay!

❦

Whittling Away. Whittle Communications, which has now contracted with more than 10,000 schools for Channel One (the news show that carries advertising) ended its fiscal year with revenues up 31% and expects a similar rise this year.

"They Laughed when

Continued

DL is as effective as on-site, face-to-face instruction because students have to take greater responsibility for their own learning. This, in turn, promises to improve their ability to make the transition to higher education. Students also report (OTA) that they benefit from the combination of more widely ranging ideas, a stronger peer group, and the greater professionalism of expert DL teachers.

A key benefit from Distance Learning for schools deficient in technology is that this represents a relatively painless way for teachers to become more knowledgeable about computers and other instructional media quickly and professionally, and with minimum exposure to failure.

Teachers are encouraged to participate in staff development, which is often held immediately after the school day, and 800 telephone numbers are available at all DL providers.

Will Distance Learning create a "star system" like Hollywood or TV news anchors? Very likely, some observers state, and a good thing, too, since it will allow the superior teacher to emerge and be compensated accordingly. Some see DL as ushering in a new age of professionalism.

Methods of transmission vary: satellite is the most common (more than 7,000 schools), with cable networks a distant second (2,500). Fiber-optic cable represents a relatively small number (645), but a recent ruling by the Federal Communications Commission to allow telephone companies to transmit television programs could mean accelerated installation of broadband fiber optics, and phone companies will be even more ubiquitous.

EPIE PREDICTS: Distance Learning will grow because--like any successful product--it fills a real need, in fact a number of them, not the least being that it puts technology at the disposal of people who are not yet comfortable with it. And it saves money. And, importantly, it gives every indication that it can reach and teach the smart and motivated students with minimum help from the teacher, leaving more time for those students who need additional help and attention.

From ERIC

Distance Education for All Ages in Minnesota: the K-12 Systems Perspective (ED 330 319) describes two-way interactive television in elementary and secondary schools. 92-page report. EDRS: microfiche $1.15, paper $12.48. Or contact Minnesota Curriculum Services Center, Capital View, 70 Co. Road, B-2W, Little Canada, Minnesota 55117.

TIEDS (Technology Integrated Educational Delivery System). A K-12 Master Plan for Infusion of Technology into Arizona Schools in the Teaching/Learning Environment. (ED 330-317). Cost, issues, technology, environment. 105 pages. EDRS: microfiche $1.15, paper $15.60.

Idaho Survey of the Educational Applications of Communications Technology: An Analysis (ED 330 324). Status, potential, and priorities. 37 pages. EDRS: microfiche $1.15, paper $6.24.

For information on Kentucky's Star Channel, which provides otherwise unavailable courses to students in remote areas across 21 states, and is in the process of expanding services: KET, 600 Cooper Drive, Lexington, Kentucky 40402.

For information on Star Schools (as noted elsewhere): The Technology Resources Center, 202 219-1699.

A 26-minute VHS videotape produced for OTA, "Linking for Learning," is available for $30, check or purchase order, from: SL Productions, P. O. Box 1243, Manhasset, New York 11030.

CRITICS SAY INTERNATIONAL TEST COMPARISONS FLAWED, NOT STUDENTS

In the continuing saga of just where American students rank in math and science when compared to students in other lands, a new interpretation reported in the New York *Times* suggests it is the comparisons, not the students, that make the U.S. look so bad.

In England, for example, only English-speaking students are reported, in the rest of Europe most poor students have dropped out of school and the statistics by age 16, in Israel the Arabs aren't counted, and in Japan only a small proportion get into high school, where the prime objective is to pass exams.

On the other side are those who say Americans are already behind by the first grade; that even if the testing is flawed U.S. kids still rank low; and that focusing on tests makes it much more difficult to make the changes that need to be made.

Dr. Harold Howe, the U.S. Commissioner of Education from 1965 to 1968 and senior lecturer emeritus at Harvard University, noted that low test scores "are not just a measure of schools; they are a measure of society.... The main problem with the school reform movement...is that we have the basic assumption we can fix the schools so the schools can fix the kids, no matter what is wrong with the family and the community."

One bright spot: the top ten per cent of American students are scoring 14 per cent higher on SAT's than ten years ago.

Free List of Books on Bill of Rights

The 200th Anniversary of the Bill of Rights is the excuse for a spate of books on the subject, and the Freedom to Read Committee of the Association of American Publishers is offering a free bibliography. List has info on 60 books from 30 publishers. Single copies free; multiples for a small fee. Contact: Richard Kleeman, Freedom to Read Committee, Association of American Publishers, 1718 Connecticut Avenue NW, Washington, D.C. 20009-1148.

The artificial method of education is to hear what other people say, to learn and to read, and so to get your head crammed full of general ideas before you have any sort of extended acquaintance with the world as it is, and as you may see it for yourself. You will be told that the particular observations which go to make these general ideas will come to you later on in the course of experience; but until that time arrives you apply your general ideas wrongly, you judge men and things from a wrong standpoint, you see them in a wrong light, and treat them in a wrong way. So it is that education perverts the mind.

—Schopenhauer, *On Education*.

Views and Reviews

Continued

Available from: National Professional Resources, 15 Berkley Drive, Port Chester, New York 10573. 914 937 8879, fax 914 937-9327.

E.L.F.

Noted Though Unread

Technobabble, by John A. Barry. M.I.T. Press, $22.50 cloth. A deprecating view of computer jargon and its infiltration into our daily life. "Accessible, even funny," it gives as one of the definitions of *user friendly*, "beneath contempt."

The New Hacker's Dictionary, edited by Eric Raymond. M.I.T. Press, $25 cloth, $10.95 paper. Takes opposite tack from *Technobabble*, glorying in subculture creativity, with listings five times greater than in previous edition.

Encyclopedia Macintosh. List price $27.95. Authors Craig Danuloff and Deke McClelland have put together a wealth of information about the Macintosh system in one volume. Offers hundreds of tips and shortcuts and special techniques, also resources including user groups and vendors.

Electronic Computer Glossary. Computer Language Company, Point Pleasant, Pennsylvania, 215 297-5999. $29.95. A dictionary-encyclopedia on a disk, more than 5,000 definitions of computer terms and phrases. Versions for DOS, Windows 3.0, or Macintosh with HyperCard.

No Amityville Horror

For students afraid of mathematics, the *Journal of Recreational Mathematics* (published in Amityville, New York) shows the lighter side of mathematics, though it can still be heavy. Useful for teachers who want an untextbook look at math. Wide ranging, from book reviews to occasional nuggets of trivia, even math humor. For example:

Trivia: In Biblical times, the highest number known was 10,000; the word for *million* was an Italian invention of the 13th century. The English word *billion* was coined in the 17th century.

Math humor: How can you put 20 horses in five stalls with an odd number of horses in each stall? **Answer**: one each in four stalls, and 16 in the other. Sixteen is a very odd number of horses to put in one stall.

Subscriptions $74.00 institutional, $18.95 individual, plus $4.50. Baywood Publishing Company, P. O. Box 337, Amityville, New York 11701. Joseph S. Madachy, Editor. Order only: 800 638-7819. Fax: 516 691-1770.

Educators Find Funding

Continued

have increased 91% while the money to pay salaries increased only 49%, employees accepted a 3% pay cut with proviso it get paid back by 1995.

Among other agreements, according to Catherine Carey, is a new approach which will save millions in the health plan, and new standards on class size: a max of 30 in elementary, 39 in secondary, the highest in the nation.

Illegally-enrolled students have become an expensive problem (3-5% of enrollment in some areas) as parents from poor neighborhoods enroll children in more affluent school systems, sometimes across state lines. Families move but keep children in same school, sometimes feigning divorce so mother and children can stay on in apartment during the schoolweek.

Target schools hire private detectives to finger commuters. Bills are sent to parents but collection is slow.

Public school to show profit: Education Alternatives, Inc., a Minneapolis company that specializes in school management for profit, was given a five-year contract by the South Point Elementary School (a public school in **Miami Beach, Florida**) to prove its contention that it can run the school better and make a profit, too. First response from students, parents, and teachers is a resounding positive.

(EPIEgram will do a follow-up on this story in future issues. Education Alternatives's phone number is 612 885-5572.)

In **Philadelphia**, Sponsor-a-Scholar program, run by Philadelphia Futures, a not-for-profit enterprise, matches students with adult mentors who are asked to donate $1500 a year for four years. Director Patricia Payne reports program near its goal of 100 sponsors and hopes to have similar program in ten more cities in the coming year.

When faced with a reduction in state aid, superintendent Mario Mancieri of **Portsmouth Schools in Rhode Island** went to the community and got the needed financial support. But that was last year; faced with further reductions, the school is now exploring new areas such as consolidating into "educational collaboratives" with other schools ("There's a lot of duplication"), better use of buses, and larger classes ("We've done the energy thing").

Is the quality of education suffering as schools struggle with budgets? The school spokespeople say they are doing everything they can to keep the quality of education at a high level.

But with so much criticism of the educational achievements of our schools, is that good enough? The situation is not unlike the jest currently popular in Russia:

A man falls from a precipice and his partner frantically yells down, "Are you all right?"

"Yes, I'm okay."

"Then climb up."

"I can't. I'm still falling."

However, we may hope, with Nietzsche, that "That which does not kill us, leaves us stronger." (While recalling a latter-day paraphrase of that famous saying in Strietz's *Modern Trilogy*: "That which does not kill me, leaves me terrified.")

Success of Turtles Underwrites Better Books, *Says* Publisher of Yearlings on 25th Anniversary

Dell Publishing's successful experiment in paperbound reprints for children, Yearling Books, celebrates 25 years of success. Over the years it has spawned Young Yearlings, Yearling Classics, Yearling Nonfiction, Picture Yearlings, and, yes, Teenage Mutant Ninja Turtles Yearlings. The ubiquitous, dysgenic reptiles wholly dominate the kiddie bestseller list. Turtle titles published by Yearling placed 1st, 7th, 8th, 9th, and 10th in 1990. Those published by Random House ranked 2nd, 3rd, 6th, and 14th.

George Nicholson, who started it all, notes that the success of the Ninja Turtle books (more than 6.5 million copies sold) gives Dell the wherewithal to underwrite a lot of "Wonderful Yearling titles that will never be bestsellers."

Source: Publishers Weekly, 10/11/91.

HELP WANTED!

We're looking for people who will help us make EPIEGRAM the essential newsletter for anyone interested in improving education.

To do that, we need information. We need tips, opinions, experiences. We need to know the good things (an exceptional teacher or program, for example), and we need to know the horror stories as well.

Here are some examples:

☛ Had a good—or bad—experience with some highly touted software or hardware or textbook? Share it with our readers.

☛ Found someone who has strong opinions of interest to other educators? (Read Mr. Gatto in this issue.)

☛ Want to voice an opinion? Fax it to **FAX POPULI, 516 765-2544.**

There are some stimulating experiments going on and we'd like to know about them. And if there are some disasters from which others can learn, we'd like to know about them, too.

To show our appreciation, we will reward you as follows:

☛ For a tip or small "squib" or contribution to FAX POPULI, we'll send you, free, an EPIEGRAM T-shirt (value $10).

☛ For a story worthy of a headline, a free EPIEGRAM sweatshirt (value $18).

☛ For a big story, something important enough to have a two-column headline, an EPIEGRAM quartz-movement watch (value $60).

☛ And for any contribution which carries your by-line, a free subscription to EPIEGRAM *plus* one of the above: T-shirt, sweatshirt, or EPIEGRAM watch, depending on the importance of your contribution.

Please note: we cannot return contributions without return envelope and postage, and the sole authority for selection lies, of course, with the EPIEGRAM editor.

If you're not part of the solution, you're part of the precipitate.

— Graffito on wall of chemistry department at M.I.T.

The success of any great moral enterprise does not depend on its numbers.

— William Lloyd Garrison.

The Word is *Systemic*

Continued

Like Alexander the Great, many hope for the single blow that parts it forever; one sees it in such ideas as a longer school day or school year, in assessment, in vouchers, in running schools for profit, in claims for technology as the panacea.

While some of these single concepts may have validity, it is obvious that none of them, in itself, is a solution, even though many can be made to work by a group of dedicated people. Much time, money, and opportunity was expended in the '80s because of this.

We do believe, however, that there is a concept emerging which has the potential to cut through the clutter. It is deceptively simple. It is built on the idea that everything in a system is interconnected; and that the health of the system depends on the health of this interconnectedness.

We live in an age built on "systems," and these systems—technological, economic, political—become intricately interconnected. This is the obvious truth we all live with.

What has not been obvious—particularly in education—, but which is beginning to emerge, is that the promised efficiency and effectiveness of systems is obtainable *only* when the systems are also "*systemic*."

That's the word we believe has the potential to do what Alexander the Great did when he made the complexity of the Gordian Knot unimportant by slicing it through with a blow of his sword.

A systemic approach is not a thing but a pathway, a guide, a philosophy, a way for viewing. It must be felt as well as intellectualized. And it is built on the premise that technology works best when it is applied systemically - not just systematically. Further, that any decision the educator makes will ultimately have systemic consequences, whether immediately recognized or not.

Here's an example of a negative systemic consequence:

A textbook is not systemic but it is familiar. When the educator replaces the printed textbook with an electronic textbook (ILS), nothing systemic has occurred. One closed system has been substituted for another; one has merely changed the medium, and the flaws of print (inflexible, quickly outdated) are generally evident in the electronic text without the benefits of print - inexpensive, individualized, portable.

Here's an example of a positive consequence which is at least partially systemic and has the potential to be taken further:

Imagine a school at the point where it decides it must begin to use computers. A non-systemic solution is to go get some computers, then look around for software, find someone who might want to run things, etc., etc.

A systemic approach would be to analyze where computer-based education will be most effective - e.g., math, science. A software search is begun even before the investment in computers (*see Consortium/TESS Update, page 8*). The outcomes are determined, the assessment program is chosen, the Instructional Management System is picked.

Everything fits together systemically (as far as it goes). Thus, when the purchases are made, the investment begins to pay off immediately, not only financially but in terms of more effective teaching, better learning, and so on.

Contrast this with a non-systemic approach and one finds computers not being utilized, software programs which don't fit the curriculum and end up gathering dust on a shelf, teachers turned off by a bad experience, students (many ahead of the teachers technologically) left bored and with educational opportunities missed.

It is not easy to think systemically but the effort must be made. The future of education in America demands it. Indeed, as business learns about the impact of the computer, it is finding out that the information technology itself demands it.

It was never more true than now that if you aren't part of the solution, you are part of the problem.

EPIEGRAM is published in cooperation with EPIE Institute by Sterling Harbor Press, P. O. Box 28, Greenport, New York 11944.

Subscription rate for nine issues a year (October through June) is $65. Additional subscriptions to the same address are $25. For addresses outside the U.S. add $5. The rate for subscribers in Consortium (SCISS) states is $45.

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FAX POPULI

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He that wrestles with us strengthens our nerves and sharpens our skills. Our antagonist is our helper.

— Edmund Burke.

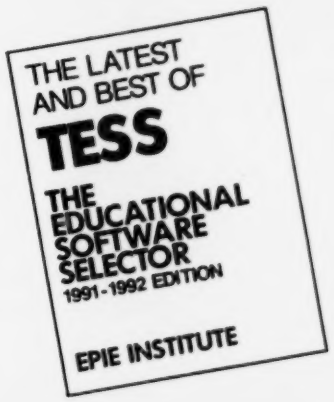
This Space is Reserved for You!

Here's your chance to be heard, to agree or disagree, to get across your unique point of view.

And, as the name FAX POPULI suggests, don't use the mails or you'll miss getting into next month's edition. *Fax* it while your creative juice (or rancorous bile) is still flowing.

Oh, yes - keep it short or we'll have to edit.

EPIEGRAM FAX: 516 765-2544



1991-1992 Edition of Latest and Best...

The 1991-92 edition of *The Latest and Best of TESS* describes in detail more than 2,500 software products, including both highly-rated "classics" and those most recently added to the TESS database.

EPIE Institute editors have culled from the complete electronic database (more than 11,000 entries) those programs which have had a large number of positive evaluations by respected review sources, as well as those programs published most recently.

The book provides all relevant information such as program type, grade level, curricular function, intended audience, scope, user grouping, description of program content and operation, product components, equipment configurations, supplier name, price, review citations, and user-site address.

An important feature of the 400-page volume is a section of summary descriptions of seven major Integrated Learning Systems (ILS) based on a major in-depth study by EPIE Institute.

The Latest and Best of TESS may be obtained for $49.95 plus $5.00 shipping & handling. Send check or purchase order to the Sterling Harbor Press, P. O. Box 28, Greenport, New York 11944. You can phone in your order to 516 765-2378; or better yet, fax it to 516 765-2544.

(*The EPIE Report on Integrated Learning Systems* is available on special order. The cost is $250. Delivery in 3-4 weeks.)

See EPIEGRAM's T-shirt offer, page 22.

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In Next Month's Issue....

- Parental Involvement
  Students do better when parents do too.

- Speech Recognition
  Why this is the future and why the products of Dragon Systems lead the pack.

- Guest Columnist
  How paraplegic John Campbell will graduate from law school thanks to speech-recognition technology.

- Ken Komoski
  On education's dirty secret – how little of the total budget is spent on teaching materials and technology. And what to do about it.

- The Importance of Hope
  Hope is a vital teaching aid. Hopeful students (and teachers) do better than nay-sayers.

- The Latest and Best of TESS
  The lastest software titles, just added to the The Educational Software Selector (TESS) database.

- Consortium Update
  How the States Consortium for Improving Software Selection is saving time and money for its members.

As well as all the regular features: Stats, Research & Reports, Views & Reviews, Technology, Fax Populi, and more.

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EPIEgram

The Newsletter of Systemic Change.

Earl L. Fultz, Editor & Publisher | Volume 18, No. 5 | February 1992

The Director's Column

Education's Dirty Little Secrets (#1 & #2)

Ken Komoski
EPIE Institute

It may or may not be true that Will Rogers never met a man he didn't like but it is absolutely true that I've never met an educator, administrator or teacher, who didn't overestimate the amount his or her school spent on instructional resources by at least 300% and generally a great deal more.

When speaking on the subject, I have offered a $100 bill to anyone—teacher, administrator, curriculum specialist, computer coordinator, media librarian or interested by-stander—who could guess the national average. I've never lost.

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CAN IBM HELP SCHOOLS INTO THE 20TH CENTURY...

Before the 21st Century Arrives?

EPIEGRAM Goes to IBM's Schools Executives Conference

by
Earl L. Fultz

Make no mistake about it, IBM is an important company. More than any other single organization, it has moved business into the 21st Century a decade or two ahead of time – not only in America but the world. It has taken ethics into cultures where "baksheesh" and "mordita" (the little bite) is a way of life. (In Germany it's okay to take a bribe as long as you pay tax on it; and then there's the Japanese stock market....)

In many areas, IBM has taken seriously John Ruskin's admonition that, "It is a manufacturer's obligation to *form* the market as well as to supply it." While it rarely has been "fustes'," it has almost always been "mostes'" – except in education. For years IBM has seemed puzzled by the peculiar needs of educators and students. It is more at home with administrators and mainframes.

The big news on IBM has been a) that they lost a few billion last quarter, b) that annual revenues were down for the first time ever, and c) that they have created a division, EDUQUEST, devoted entirely to education.

So we went to the IBM Schools Executives Conference in Atlanta and we're here to report that after a decade of shooting itself in both feet and almost every other part of the anatomy, IBM appears to be changing its corporate culture vis-a-vis education.

Most significantly, IBM has softened its NIH (Not Invented Here) stance and opened its doors to third-party developers – something Apple did with great success more than a decade ago. The result is a healthy and growing array of vendors with links

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AS MULTI-MEDIA GROWS , SO DOES TANGLE OF RIGHTS

TEACHERS MAY BE FLYING JOLLY ROGER

No matter what the medium, piracy is big business. For example, software piracy alone, in Western Europe alone, accounts for revenue losses of more than $4 billion annually, according to what the Software Publishers Association says are conservative estimates. Thus there is a growing effort to clamp down on electronic buccaneers; and some of them might be found in classrooms. With the growth of multi-media, securing rights promises to be one of an educator's more persistent headaches and one not likely to go away soon.

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Your Consortium/TESS Update begins on page 5

Featuring the TESS IN-BASKET of *The Latest* educational software

Editorial

THOUGHTS FROM A MOTEL ROOM

Dateline: Atlanta, Georgia (IBM Conference) . This February issue was delayed because we were in Atlanta covering two events of importance: The IBM National School Executive Conference from January 21 to 29, and the SCISS annual meeting on January 26.

There was a lot of impressive stuff (EPIE Institute was there), which all together was a significant step toward the kind of "systemic" change we think essential. But if, as we were told the other day, 50% of teachers have never used a computer in a teaching situation, what does all this advanced technology mean to them? They are on another planet, and had these people attended the conference, it would have seemed like the *Enterprise* had landed from an episode of *Star Trek.*

❦

Does anyone in education read the want ads? We dipped into the Atlanta *Constitution* while there for the Conference. ACCOUNTANTS: "experience with automated general system, preferably MAS-90 accounting software;" ADMINISTRATION: planning and scheduling coordinator, "Word Perfect;" ADVERTISING: "Mac knowledge;" AUTOMOTIVE: "professional technicians" for computerized ignition, brakes, etc.; BANKING: "encoders, OPEX operators;" BOOKKEEPERS: "two years experience with computerized, etc....." There were 25 ads in the DATA PROCESSING heading alone, more than for any other single category, while most of the ads for SECRETARIES had requirements for "word processing," and some asked for Lotus, composition skills, (i.e., desktop publishing) and "PC knowledge in a Windows environment."

The real world—for which students are presumably being prepared in our schools—is so dependent on computers that one can't get a decent entry-level job without computer knowledge. Yet most students get little hands-on experience or even exposure to the real world awaiting them. Were it not that the wily Japanese foisted Nintendo on us, the average student would have no experience with computing technology at all, even after 12 years of school.

No wonder employers are quoted as saying they prefer to hire 24- or 25-year-olds because they are "seasoned" – which we take to mean that they have had time to learn the computer and other technological skills they didn't get in school.

"Luddite," you may recall, was the name given to workers in cottage and other industries whose livelihood was threatened by the new technology of the Industrial Revolution, especially steam-driven spinners and weavers. Named after Ned Ludd, characterized as a "half-witted man," the Luddites favored a direct response, breaking machinery and burning factories. From this distance, it looks quaintly potty. Nothing was about to stop the Industrial Revolution.

Fade out, fade in, to 1992 and the public school system, and one asks why it has taken so long for the new learning technologies to be accepted there. Can it be there are contemporary Luddites about? And why? It is an established fact that modern workers can be expected to need retraining two, three, even four times during the working life, the march of technology is so swift and irresistable. Can educators escape a similar need to change and grow?

The original Luddites didn't do much damage of a lasting nature. The same can't be said for the Luddites in the educational system as year after year another crop of youngsters get sent out, ill-trained and unequipped to make it in a computerized world.

We're starting to get mad. What's so complicated? What's so fearsome? Start somewhere...anywhere. As the shoe ads say: Just Do It!

❦

We were enormously buoyed by the meeting of the States Consortium for Improving Software Selection (SCISS), which distributes the TESS database, especially the election of Karen Kahan of Texas as the new chairperson. Enthusiasm for the new update was high and plans were laid to help other states get on board as quickly as possible. For the computer-illiterate, browsing of software in TESS is a good place to start. Searching TESS is also an essential part of getting educational materials that align with curriculum (see Ken Komoski's column).

Earl L. Fultz
Editor & Publisher

PARENTS' INVOLVEMENT IMPORTANT TO STUDENTS AT ALL GRADE LEVELS

Parents Are a Child's First Teachers

Research proves what commonsense tells us: students do better when parents are involved, and this is true regardless of education, income, or ethnic background.

Further, while many parents tend to be active chiefly in the early years, their involvement is just as important in the middle school years (10-14), where, however, it is also more difficult (with adolescent attitudes, the parents' busy lifestyle, and multiple teachers). Also, parental involvement is not actively encouraged by many educators in the middle years.

It's important for educators to remember that parents are a child's *first* teachers, and that long after a schoolteacher has moved on to other children, the parents will be living with the consequences of the child's education.

Thus a key part of school restructuring is the increased involvement of parents, and a report from the National Association of Partnerships in Education says that more than 50% of school districts have some kind of partnership with parents. While some are undoubtedly "feelgood" relationships without much substance, the study reported that a third of the partnerships support tutoring, mentoring, job training, career-awareness efforts, and student-recognition awards.

The societal problems of the 1960s which helped stimulate parental involvement in schools have actually gotten worse: 40% of today's schoolchildren will have lived in a single-parent environment by age 1; 20% live in poverty; 15% speak a native language other than English; 1 in 6 has a physical or mental disability.

The situation is exacerbated by the fact that society changes more rapidly than schools. Parental involvement and a growing call for accountability are the harbingers of change. There is ample evidence that there is improved student achievement from parental involvement and significant long-term benefits such as better school attendance, reduced dropout rates, decreased delinquency, and lower pregnancy rates.

Parental involvement is not, of course, a panacea for our educational crisis; but it is essential to any linking of society, school, and home. □

SOME RESOURCES:

National Coalition for Parent Involvement in Education (NCPIE). For free brochures, send stamped (45 cents), self-addressed envelope to: NCPIE, P. O. Box 39, Washington, D.C. 20036.

Parent-Teachers Associations. Send stamped, self-addressed, business-size envelope to: Publications List, National PTA, Dept. D, 700 North Rush Street. Chicago, Illinois 60611-2571.

ASPIRA Association produces booklets to help Hispanic parents with their children's education. Contact: Lisa Colon, 1112 16th Street N.W., Washington, D.C. 20036. (202) 835-3600.

"Beyond the Bake Sale," an educator's guide to working with parents, by Anne Henderson, Carl Marburger, and Theodor Ooms. $8.95 from the National Committee for Citizens in Education. 10840 Little Patuxent Parkway, Suite 301, Columbia, Maryland 21044.

"The Forgotten Factor in School Success: The Family. A Policymaker's Guide," by Dorothy Rich. $5.00 from the Home and School Institute, 1201 16th Street N.W., Washington, D.C.

"Increasing Parental Involvement as a Means of Improving Our Nation's Schools," by Evelyn K. Moore, Black Child Development Institute. ERIC Document Reproduction Service (ED 325 232 $6.24), 7420 Fullerton Road, Suite 110, Springfield, Virginia 22153-2852.

SYSTEMICS

notes and comment

EDITOR'S NOTE: It is our belief that systemic change can begin just about anywhere in the school system. It is not necessary to have a systemic plan in place; all that is needed is the vision to recognize how one's own activities and use of technology connects with those of others, and to be ready to create a systemic whole as the opportunities arise.

Gleanings from "Developing Leaders for Restructuring Schools: New Habits of Mind and Heart (PIP 91-824)," U.S. Department of Education Office of Educational Research and Improvement.

• Education is the last of the big dinosaurs.

• Restructuring requires that we rethink the way we go about changing and improving.

• Restructuring schools is a means to an end: the end being learning success for all students.

• Restructuring schools focus the attention of all professionals and the community on the student and the teaching and learning process.

• Restructuring is at least as much an interior change as an exterior one: we need a better focus on what we really want to accomplish and a firmer grasp of the realities of what we can accomplish with real people and real restraints.

• Restructuring efforts are by their nature "bootstrap" endeavors, relying on the existing system of people and resources to renew themselves.

• If we believe that all kids can learn, we should act as if all members of the organization can learn also.

• Discarding unproductive and inhibiting behaviors and attitudes can contribute as much to restructuring as acquiring facilitating ones.

continued on next page

IS OREGON'S HB 3565 THE NEW WAVE?

Oregon, known as the Beaver State, is putting a new emphasis on education which has the same solid and stolid, no-nonsense approach that the toothy rodents need to build their dams.

Oregon's House Bill 3565, promoted vigorously by Vera Katz, now running for Mayor of Portland, has a number of key provisions that would:

☞ set education performance standards for all students which must be met to obtain the Certificate of Initial Mastery (grade 10) and the Certificate of Advanced Mastery (grade 12). The standards are benchmarked to the highest in the world.

☞ Implement ongoing performance-based assessments at grades 3, 5, 8, and 10, including work samples, portfolios and other "authentic" assessments, to measure student mastery and progress.

☞ Hold schools accountable.

☞ Make Head Start available to 50% of eligible children by 1996, all eligible children by 1998.

☞ Provide all students, after receipt of the Certificate of Initial Mastery, an opportunity to branch out into educational options to obtain a Certificate of Advanced Mastery with college preparatory *or* academic professional technical endorsements, or both.

Stripped of officialese, this means that students in Oregon, after receipt of a Certificate of Initial Mastery, are then given considerable latitude in taking those courses which will provide them with the proper education based on their probable areas of specialization, whether college preparatory and/or academic/professional-technical or both.

Proponents of the bill point out that the U.S. is the only major industrialized country that does not have a well-defined and implemented school-to-work transition. By offering "new opportunities for skilled technological training, often in non-traditional settings such as the workplace, HB #3565 reaches out to our most neglected students – the 70% who will *not* go on to college."

EPIEGRAM will be watching this one, and other states will, too. ❑

FLORIDA'S "PROJECT CHILD" TAPS TECHNOLOGY FOR K-5 PROGRAM

Jaded grade-school teachers say they are "renewed" by the innovative restructuring of classrooms and use of technology in the "Project Child" program, a five-year program funded by the Florida State University Center for Instructional Development and Services. When queried whether they wished to continue teaching in the innovative environment, a resounding 95% said yes.

In Project Child, children are not pulled out of the classroom when they work on computers, and thus the teacher remains central to the program. A major outcome of the program has been to allow teachers with minimal experience as technology users to become proficient in blending computers with their instructional programs.

The isolated rows of desks are gone; the classroom has a couch, with tables and floor crammed with activities. Daily computer use is an integral part of the program, not an add-on, and those connected with the project say it works.

For more information contact Educational Technology Services, Florida Department of Education, Tallahassee, Florida 32399. Telephone 904 487-0980. ❑

Systemics continued from page 3

• Discarding unproductive and inhibiting behaviors and attitudes can contribute as much to restructuring as acquiring facilitating ones.

• Shared decision-making is not a solution. It is a process to arrive at a solution.

• Some training will need to be focused exclusively on administrators but a substantial portion might be more appropriately provided to administrator/teacher teams.

• Central office roles must change to a resource/service center with people moving from traditional roles of director, controller, and monitor, to enabler, facilitator, and helper.

• One quickly becomes a veteran in this process; and there is a need for a "network of veterans." ❑

Yea, Team!

Hate meetings? Want to be more efficient? Replace meetings, whenever possible, with teams.

Meetings tend to be unfocused and meandering, wasteful of time and energy, and prey to introduction of extraneous matters, usually by people who have little to contribute and shouldn't have been included in the first place.

Solve problems with teams that are focused and given responsibility to find answers. Research shows that allowing individuals to contribute as part of a team taps resources not utilized in a meeting environment.

Generally speaking, smaller is better than larger, and teams should know from the start if they are short-term to handle a single problem, or permanent (longer than a year) for more complex situations, and whether they are expected to do the work or function in an advisory capacity.

An EPIE observation: team learning might best be taught by teachers who are themselves effective in a team environment. ❑

Only once in its long and useful life, in 1919, has this book been enlarged and revised. But in twenty-four years much progress can be made, and the methods of 1919 are not likely to be the same as those of 1945.

– Publisher's note to third edition of *Calculus Made Easy*, recently republished by St. Martin's, New York.

Next: *Arithmetic Made Easy.*

Guest Columnist

My Friend, The Dragon

by

Glenn Campbell

***EDITOR'S NOTE**: Glenn Campbell was 16 and full of the exuberance of youth when he rode his bicycle down a steep hill near his home in Port Jefferson on Long Island, New York. Losing control, he collided with an automobile and in that brief instant, his life was changed forever. When he regained consciousness in the hospital, he was paralyzed from the neck down.*

At first, I did not want to know the full extent of my injuries. I kept believing that I would fully recover. It's called denial. But sometime in July, 1985, when the need for heavy medication had passed, the neurological team was in for morning rounds and as they were leaving, I asked the last one: "Will I ever walk again?" She answered honestly, softly: "Probably not." I was left facing something like the death of a large part of my body. I couldn't sob but I wanted to. I could just feel the tears rolling down my cheeks.

I wasn't ready to face it, not then or for many months. As the weeks passed, I was forced to understand what "quadriplegia" really means but my thoughts were a jumble; I felt anxiety and confusion.

Months passed, the rehabilitation was complete (whatever that meant) and I was back home at last, freed of institutional living but, with support of a marvelous family, facing new problems, among them how to continue my education. During my senior year of high school, education was relatively easy. Several tutors came each week and I completed my high school requirements in time to graduate with my class in June, 1987.

Then came the struggle; while I never had any doubt that I would go to college, the logistics were complicated. I started visiting campuses of nearby colleges but it soon became apparent that daily travel to classes, plus therapy, would leave room for only one course at a time. I decided to be an independent student, taking all my courses at home and transmitting my work to my professors via a computer network.

The college's computer system was rather good but the only equipment available to me at the time was an Apple computer, operated with a mouth switch, which allowed me to pick and choose letters one at a time. This was tedious and time-consuming but I stuck with it and completed seven courses in about 2½ years. At such a rate, I would be 89 before I finished college and law school.

Incidentally, I had decided not to apply for government assistance in college tuition until I had proven that I could be a successful college student. I now knew I could do it and so I applied to VESID, which stands for Vocational and Educational Services for Individuals with Disabilities.

I then started looking for new technology, collecting every bulletin, press release, and advertisement I could locate. It soon became apparent that Dragon Systems, a small research-based company in Massachusetts, had developed what I needed: a voice-activated computer.

With the help of VESID and the generosity of the Port Jefferson Lions Club (someday I want to write in detail how I feel about them), I was able to get the complete Dragon Dictate System. It has made me so productive that I have completed three courses in just three months! I can't imagine life without it.

It took about a month for us to get used to one another. The Dragon had to be trained to recognize my voice and I had to learn how to tell it what I wanted. Basically, I speak and it types.

When it misunderstands a word, I give it an "oops" command. The last several words are then highlighted. I zero in on the mistake and go into the "spell mode." I then begin to spell the correct word and the system gives back alternatives which seem to correspond with what I am spelling. As soon as I see what I want, I command "Okay" and continue as before.

The Dragon Dictate starts with a ready word list of 25,000 and a "rolling dictionary" of 80,000 words (from the Random House Dictionary) which the operator can use to add or subtract words as the need arises.

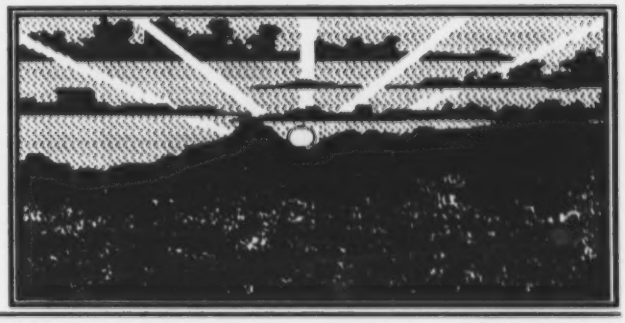
In addition to writing and editing capabilities, the Dragon, along with the modem, will dial the phone for me. All I have to say, for example, is: "Dial School" and it will get the number faster than if a friend or one of my family dialed it for me.

Even without the Dragon, somehow or other, I would have finished college and become a lawyer. My Irish-Italian stubbornness would have made me persist. But it has cut several years off my projected education time and it has spared me from days that would have been long and exhausting. With the Dragon, it is a pleasure to be a student and I look forward to earning a living.

The Dragon has made me enjoy sitting down to do my work whereas I dreaded it before. I've begun to think of specific ways I can use it in my work once I finish Law School. For example, since I can access databases, I should be able to research as skillfully as any one. With Dragon, I can write a brief with the best of them.

But why stop there? The Dragon lets one be productive and useful in many ways – one could run a business, write a book, consult, advise, run for office. Run for office? Why not? Shouldn't the disabled be represented in Washington?

Voice recognition is still in its infancy but it's clear that there are many benefits which have not yet been explored. My friend, the Dragon, is sure to lead the way. ❑



Dragon Systems

Leader in Voice Recognition

The Drs. Baker, Janet and James, founders in 1982 of Dragon Systems, a privately held corporation, are leaders in providing affordable speech recognition for personal computing systems.

Their collaboration began at Rockefeller University while working on graduate fellowships. Before forming their own company, they worked on recognition systems with IBM and Exxon's Verbex Division, and have a number of relationships with OEMs (original equipment manufacturers) such as Lanier Voice Products and Xerox Corporation. Indeed, IBM's VoiceType, with a 7,000-word active vocabulary, is a Dragon System.

Dragon Dictate (the system used by Glenn Campbell) has a 30,000-word active vocabulary and costs under $10,000, making it a viable option for applications for other than the handicapped (e.g., eyes-busy, hands-busy environments and for executives and professionals unlikely to learn keyboards). Because the system constantly adapts to the speaker to improve performance, people with impaired speech can use it if their words are consistently pronounced. Speeds of up to 40 wpm can be obtained but current technology requires a brief pause between words or phrases. Continuous speech recognition is already well advanced under a project funded by the DARPA (Defense Advanced Research Projects Agency) Spoken Language Systems Program, for which Dragon is a primary contractor.

TECHNOLOGY AND THE HANDICAPPED. Technology designed to help the handicapped has made enormous strides in recent years and one good source of information for persons with mobility impairments is the IBM Special Needs Information Referral Center, P. O. Box 2150, Atlanta, Georgia 30301-2150. 800 426-2133 (Voice); 800 284-9482 (TDD).

In addition to information on support groups, there is a body of information on specialized modifications from a variety of vendors, including:

KEYBOARD MODIFICATION.. Special adaptions for typing with one hand, only one or two fingers, a head pointer, mouthstick or handstick, including key guards and abbreviation-expansion programs.

ALTERNATE INPUT. Optical pointers, light pen, touch-sensitive grid, Morse code, joysticks, eyebrow or eye switch, sip-n-puff switch, mini-keyboards requiring only 100 grams of pressure, various mouse devices including trackball, foot operated, light operated. If the user is capable of even slight movement in some part of the body, an input device is available.

ENVIRONMENT CONTROL. Using accessories connected to the computer, the disabled person can operate a radio, television, phone, air conditioner, heating unit, motorized drapes, or almost any other electric device (including emergency signals). This obviously contributes to a sense of independence.

Apple Too. Apple Computer, which set up a clearinghouse for adaptive technology, now has an extensive program through its Office of Special Education and Rehabilitation." Apple and the Disabled Children's Computer Group (DCCG) and working in close cooperation on the National Special Education Alliance (NSEA), a growing coalition of community-based organizations. Currently, NSEA and Apple connect more than 30 centers around the U.S. via AppleLink. Call 408 974-7910 for more information. ❑

STATS

THE "DISSING" OF AMERICA. During the 30 years between 1960 and 1990, the number of children in America hovered around 64 million, relatively unchanged from year to year.

The number of adults aged 18 to 64, however, increased from 100 million to 152 million as the Baby Boomers bloomed.

The increase of those 65 and older was even greater, from 17 million to 31 million.

"With many more adults available to provide and care for children," write Fuchs and Reklis about these statistics, "a substantial increase in the well-being of children might have been expected. Instead, the reverse seems to have occurred." Victor R. Fuchs is the Henry J. Kaiser, Jr. Professor at Stanford and research associate at the National Bureau of Economic Research, where Diane Reklis is a research assistant.

The authors believe conditions for children have deteriorated substantially compared to previous generations and point out that a national household survey of parents in 1988 reported that nearly 20% of children ages 3 to 17 had one or more developmental, learning, or behavorial disorders. By the time they reached ages 12 to 17, one in four adolescents had suffered at least one of these disorders.

COUCH POTATOES SPROUT STATISTICS. Leisure time in America declined from an average of 3,307 hours per year in 1985 to 3,262 in 1990, almost two full days, this according to a study of long-term trends by Veronis, Suhler & Associates, an investment banking firm. The survey also noted that Americans spent less time reading newspapers and magazines, less time watching network TV, and less time listening to radio.

However, the adult couch potato spent more time listening to music (up 27%) and a great deal more time (up 233%) watching video cassettes. Amounts of beer and potato chips consumed were not included in the report.

ECONOMY DOWN BUT ENROLLMENT UP. Despite the recession, college enrollment is up in many states (e.g., 7% in Louisiana, 5% in Pennsylvania), according to the American Council of Education. This is especially true in two-year institutions where the emphasis on occupational education helps bolster job skills. Another factor – when jobs are scarce, students stay in school longer, improving their competitive skills, as well as living off the folks another year.

There is a way to do it better. Find it.
– Thomas Alva Edison.

EPIEGRAM

Affiliated with EPIE Institute

EPIEGRAM is published in cooperation with EPIE Institute by Sterling Harbor Press, P. O. Box 28, Greenport, New York 11944.

Subscription rate for nine issues a year (October through June) is $65. Additional subscriptions to the same address are $25. For addresses outside the U.S. add $10. The rate for subscribers in Consortium (SCISS) states is $45.

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Scop House, Design & Production

THE STATES CONSORTIUM FOR IMPROVING SOFTWARE SELECTION
SCISS
TESS
THE EDUCATIONAL SOFTWARE SELECTOR
UPDATE

TESS Update Released

EPIE Institute has just released its biannual update of TESS (The Educational Software Selector) to all members of the States Consortium for Improving Software Selection (SCISS). This newest release adds almost 500 new educational software programs to the more than 10,000 entries now in the TESS Database.

Participating states in the Consortium are granted unlimited use and distribution of TESS, a searchable database of information about education software, to all schools, colleges, and research groups within the member states.

Some of the new software programs added to the database are listed in this section of EPIEGRAM. Information about the program, curriculum and grade use, price, availability, hardware and—when available—review citations, is provided in each software entry.

In addition to the new software programs, EPIE has made several new technical enhancements to make the database easier to use. For instance, the pull-down menus have been amended and other menu options have been added to facilitate movement around the database.

Another new feature is the capability to save searches and access that information at a later time. Also, the installation process has been simplified to enable TESS users to install the database onto a site computer more easily than in the past.

✸

As results from the most recent TESS mailing to software suppliers have been tabulated, the TESS staff has added 25 new software companies to the database, bringing the total number of publishers to 942.

In addition, the TESS staff has added 412 new software products, eliminated 435 others, to reach a total of 10,230 descriptions in the database. New products are monitored monthly by the TESS staff, many of which appear in EPIEGRAM's UPDATE section.

Besides the supplier mailing, TESS staffers also identified over 1,000 new review citations, bringing that total to 10,230. Of the reviewed products, only 972 were highly rated by the review sources that EPIE monitors. However, TESS is so comprehensive that only about 4 out of 10 programs entered in TESS have ever been reviewed.

continued on page 6

INDIANA JOINS CONSORTIUM

Other States to Follow Soon

Indiana joins the list of states participating in the States Consortium for Improving Software Selection (SCISS). Indiana-based Purdue University, which plans to utilize the TESS software database in its teacher-training program, provided funding for the state's first-year membership fee.

Although plans for disseminating the database to schools statewide are still tentative, discussions are focusing on distribution of TESS through Indiana's eleven regional education centers.

Momentum for joining the Consortium is building in many states, particularly in the Midwest and West, as educators learn about the database and begin to realize the need for it: that as teachers are brought into decisions about software, they must have access to dependable information on available programs.❑

Technology & Teaching

Richard Wenn

Purchasing a CD-ROM Reader

If you are ready to purchase a CD-ROM reader, the major factors in your purchasing decision must be access time, access time, and access time.

The most noticeable difference between brands of CD-ROM readers is the amount of time it takes between the moment you request data and the moment it actually appears on the screen. This speed is measured in milliseconds.

The fastest CD-ROM readers on the market today have an average access time of under 300 milliseconds. The drive you purchase should not be slower than 325 milliseconds. Three hundred milliseconds may seem trivial, but when using the more graphic-intensive CD-ROM titles, a faster reader makes a big difference.

continued on page 6

Inside...Four Big Pages Chock-a-Block with
✸ Math Software Titles ✸
Newly Added to TESS!

BEST COPY AVAILABLE

TESS Update continued from page 5

Consortium Saves Time and Money. Barbara Harper of the Genesee School District in Flint, Michigan, said it best: "The moment of truth comes when I ask how long they [teachers] have been searching for a particular kind of software. Often the answers are 'weeks' or 'months.' When I show them what TESS can do in minutes, they get excited."

The TESS database is the most comprehensive source of information about educational software available anywhere. It encourages the user to define what he or she wants from a software product and then applies those definitions to the more than 10,000 programs in the database. Within minutes, TESS conducts a search and produces a listing of programs that meet specific curricular needs.

How TESS Works. Let's take as an example a high school teacher interested in locating software products that will supplement his lesson in ecology. He uses a Macintosh computer and must take budget into consideration. In using TESS, this teacher might begin the search by defining the following set of parameters:

Hardware family: Macintosh
Grade level: 9-10
Maximum price: $100
Subject: Ecology

These few general parameters will produce a list of products, but by putting in more parameters, the user can define ever more specific needs (e.g., ecology in America, impact on wild life, and so on).

The teacher can print the results of the search to either disk or printer, or may wish to browse through the information about the programs right on the computer screen and print only those that are found to be most suitable to the lesson.

Why Users Like TESS:

☞ it's complete and comprehensive;

☞ it saves time by making it easy to identify software that fits the user's specific requirements;

☞ it helps the user find programs that are highly rated by review sources and evaluation agencies;

☞ it tells users who to contact to acquire the program, how much it will cost, as well as preview, warranty and other policies; and

☞ it does all this and more quickly and easily;

To find out more about the TESS database, both the electronic version and the 1991-92 print edition, *The Latest and Best of TESS*, contact EPIE Institute at 516 728-9100. ❑

CD-ROM continued from page 5

The type of computer platform you are going to use will also make a difference in your choice. Most drives are marketed for use on only one type of computer. Drives made for the Macintosh connect to the computer using an SCSI port. If you buy a drive for the IBM you will most likely need to install an interface board in the computer.

The NEC CDR-73M external CD-ROM reader has the ability to be used with both Macintosh and IBM-compatible computers, although the purchase of a separate interface kit is required for each computer. This drive deserves special consideration if you want a CD-ROM reader that can be used on both computer platforms.

Be sure that the unit you purchase has a headphone jack and a volume control so that you can use it in a library or classroom. If you do not already have a pair of stereo headphones you can buy a pair at a consumer electronics store for about $20.

To justify the purchase of a CD-ROM you will need at least one CD-ROM software title that will make your purchase worthwhile. Many of the leading manufacturers help you along here by bundling one or more titles with their drive. Consider both the quality of the CD-ROM reader you purchase and the usefulness of the software that comes with it.

You will find the best prices for these drives in reputable mail-order catalogs. Mac Connection and Mac Warehouse are my favorite distributors for Macintosh products. Plan on budgeting $700 for your first CD-ROM reader and then look for the best price. Pioneer, Mirror Technologies, NEC, and Sony all make drives worth considering.

As with any new technology, the prices and performance will continue to improve over the next few years. But if you can afford to buy one drive now so that your school can begin to learn how to use this exciting new technology in the classroom, it will be worth the early investment. ❑

APPLE TOO

With the ink barely dry on a deal with IBM, one which will ultimately link the two previously incompatible systems, Apple is deep in talks with Sony, which is expected to merge Apple's easy-to-use software with Sony's next generation of consumer-electronics hardware.

Expected results from the Sony connection: Apple will be able to deliver on multi-media technology it has only been able to talk about before, e.g., a rumored low-cost Mac with internal CD-ROM. ❑

POCKETFUL OF SHAKESPEARE

Tempest in a Teapot?

Sony's recently unveiled Data Discman ($550), a pocket-size electronic gizmo based on CD technology, is offering classics (Shakespeare, Homer, Tolstoy) on a CD for bookworms who are willing to shell out $40. So far, there are 20 CDs available for Discman. Apple expects to announce a similar product soon. ❑

TECH NOTES

EAST MEETS WEST IN HIGH-TECH AUDIO PACT

Although Philips Electronic (Netherlands) and Sony (Japan) developed the compact disk together in the early 1980's, they have carried on a bitter dispute ever since over what technology should be the basis of the next generation of audio equipment. Each company accused the other of confusing consumers with new products which were incompatible and only marginally superior.

Philips championed DCC, the new digital compact cassette, whereas Sony wanted its mini-disk, known as MD, to prevail. Despite being half the size, MD has the same playing time as the conventional CD. Furthermore, it is possible to record on MD's, much as with tape. DCC has sound quality slightly below that of CDs or MDs but ordinary tapes can also be played on a DCC player.

Agreement was reached recently to license jointly the MD technology; Philips is already licensing DCC to other manufacturers.

DIGITAL VIDEO REVOLUTION

Hard to believe, but digitized video will make television as we know it the latest dinosaur. Digitized moving images (the 0's and 1's of computer code) are far easier to store and manipulate than the traditional analog signals transmitted as waves in television broadcasts.

This is the point where computers and communications come together, and companies are racing to get out ahead. Big problem is that one minute of digital video requires 2 billion bytes of computer storage; but that's being solved by advances in compression of data and fiber-optic transmission.

EDIT ME IN, COACH

A coaches résumé of the future will probably emphasize skills at editing videos...at least that's the hope of Lafayette Instrument Company of Lafayette, Indiana, which is marketing low-cost video systems aimed specifically at the coach's need to study opposing teams.

Instead of going through individual tapes with players, a process which takes an inordinate amount of time, the coach can edit information from several tapes into a single video. This leaves more time for regular study, says Lafayette ingenuously.

The low-cost system ($5,000) does the work of much more expensive setups used by the pros, and for an extra thou you can draw on the video screen, just like John Madden. (Lafayette Instrument, 800 428-7545.)

APPLE MARCHES ON IN QUICKTIME

You may not be ready for Quicktime, but it's ready for you. Expect a flood of products that will make video, animation, and sound almost as easy to use in computer programs as text and graphics.

While Quicktime is invisible to the average user, it provides a set of standards and tools that is bringing a glint to the eyes of software developers (Bank Street Writer, Kidpix, Deltagraph, even a baseketball simulation built around a digitized Michael Jordan). Seems likely Apple's new technology partner Sony will have something to add as well.

Not to be outdone, Microsoft has already announced that the next version of Windows, due in April, will include multi-media technology and a few bells and whistles that Apple hasn't included yet.

ERIC & TESS

For the many pilgrims searching for a path through the wilderness of educational materials and technology, two databases are essential:

ERIC (Educational Resources Information Center) and TESS (The Educational Software Selector).

Established in 1966 by the U. S. Department of Education (Office of Educational Research and Improvement), ERIC is the world's largest source of education information, with more than 700,000 abstracts of documents and journal articles on education research and practice.

However, ERIC has no information on educational software or other educational media. For this, the searcher must turn to another database that can also claim to be largest of its kind, TESS, the Educational Software Selector, from EPIE Institute. TESS is available in two forms: a print version, *The Latest and Best of TESS*, which contains complete information on more than 2,500 educational software programs as well as 500 of the most highly rated (available as described below); and the complete electronic version with more than 11,000 entries which is available only through the States Consortium for Improving Software Selection (SCISS).

With the power of the Federal Government behind it, ERIC is available worldwide at more than 3,000 locations. Besides the print and microfiche indexes, ERIC is available on-line, and on CD-ROM. The on-line database is updated monthly and the CD-ROM quarterly. For more information, call ACCESS ERIC at 800-USE-ERIC.

With the growing power of the States Consortium behind it, TESS is rapidly appearing at hundreds of sites in member states. When a state joins the Consortium, it gets the rights for unlimited distribution within the state, including all schools, universities and colleges, as well as research organizations.

For more information, call the Consortium Manager, Pat Lutzky, or the Executive Director of EPIE, Ken Komoski, at 516 928-9100, or fax inquiries to SCISS, c/o EPIE Institute, 516 728-9228. ❑

The Latest Mathematics Programs from the TESS Database

ALGE-BLASTER PLUS
Davidson & Associates
Mathematics: Algebra
Grades 7-12
Offers a step-by-step approach to algebra. Includes 5 learning activities and hundreds of algebraic equations, graphing games, and exercises for translating word problems into algebraic expressions. Can be customized by adding algebra problems with the easy-to-use editor. Keeps records.
IBM PC and compatibles $49.95; Apple II+/IIe/IIc/IIgs $49.95; Macintosh Plus $59.95; network version available.

ALGEBRA XPRESSER
William K. Bradford Publishing Company
Mathematics: Algebra
Grades 8-12
A manipulator that expands, calculates, simplifies, factors, solves, and graphs algebraic expressions. Once user begins to transform the entered expression in the Equivalence Window, the Record Elevator is activated. Buttons allow user to move the display from the beginning and end of a sequence of transformed expressions.
Apple Macintosh 512E, Plus, SE, II, $149; network version available.

A CHANCE LOOK
Sunburst Communications
Mathematics: Probability
Grades 4-12
Students can investigate probability by flipping coins, tossing cubes, and rolling multi-sided objects. They see the results graphically displayed as outcome tallies, bar graphs, and line graphs. A chart provides relative-frequency data.
Apple II+/IIe/IIc/IIgs, $79.

CREATIVE PROBLEM SOLVING
J. Weston Walch, Publisher
Mathematics: Logic and Problem Solving, Basic Skills, Decimals and Percents
Grades 6-12
Challenges students to create their own mathematical problems when given a set of digits and operations to be used. Users combine all digits into an equation that will result in the given answer. Separate reproducible teacher book contains worksheets that focus on concepts presented on disk. Disks may be purchased without workbook. No recordkeeping. Not copy protected.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $39.95.

DECIMAL CONCEPTS
Minnesota Educational Computing Corporation
Mathematics: Basic Skills, Decimals and Percents
Grades 3-6
Introduces students to the world of decimals. Three games help them practice such decimal concepts as place values, ordering and comparing decimal numbers, rounding decimal numbers, and exploring relationship between fractions and decimals. Contains variety of teacher options. Includes textbook. Part of the Conquering Math series.
Apple II+/IIe/IIc/IIgs, $59.

ESTIMATION ACTIVITIES
Minnesota Educational Computing Corporation
Mathematics: Basic Skills, Estimation
Grades 4-8
Presents five games that require students to develop strategies and use their estimation skills in order to be successful. Provides an open-ended environment for students to apply the strategies they practiced in Estimation Strategies by MECC. Part of the Estimation series.
Apple II+/IIe/IIc/IIgs, $59.

ESTIMATION STRATEGIES
Minnesota Educational Computing Corporation
Mathematics: Basic Skills, Estimation
Grades 3-6
Students are introduced to the various strategies used for computational estimation. These strategies—ranges, rounding, front-end digits, compatible numbers, and clustering — are presented in a guided-learning environment and focus on leading students through processes involved in each strategy.
Apple II+/IIe/IIc/IIgs, $59.

ESTIMATION TUTOR
J. Weston Walch, Publisher
Mathematics: Basic Skills, Estimation
Grades 5-9
Students learn to estimate quantities, spatial distances, and locations on a number line. Contains six games, four set in a grocery store, one with a spaceship, and one with invisible aliens. Keeps records. Not copy protected.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $39.95.

EXPLORING MEASUREMENT, TIME AND MONEY LEVEL I
IBM
Mathematics: Basic Skills, Multiple Topics
Grades K-2
Helps students learn about linear measurement, tell time, and use money values and perform transactions. Instruction/ feedback given orally through the speech option. There's a Talking Clock and MoneyBoard, and a simulated store. Measure It shows students how to compare and measure lengths of objects. Supports TLC. Copy protected.
IBM PC and compatibles, $141; network version available.

EXPLORING MEASUREMENT, TIME AND MONEY LEVEL II
IBM
Mathematics: Basic Skills, Multiple Topics
Grades 3-4
Helps students learn about linear measurement, tell time, and use money values and perform transactions. Students learn to set clocks, add and subtract time, and work with elapsed time. They make change and solve problems with coins/bills. They collect, explore, and compare measurement data. Supports TLC. Copy protected.
IBM PC and compatibles, $141; network version available.

EXPLORING MEASUREMENT, TIME, AND MONEY LEVEL III
IBM
Mathematics: Basic Skills, Multiple Topics
Grades 5-6
Helps students learn about linear measurements, tell time, and use money values and transactions. Students estimate costs and select best buys. They record, display, analyze, and compare data. Encourages students to think about mathematical relationships. Lays foundation for future work with spreadsheets. Supports TLC. Copy protected.
IBM PC and compatibles, $141; network version available.

EXPLORING SEQUENCES AND SERIES
Minnesota Educational Computing Corporation
Mathematics: Basic Skills, Number Systems and Counting
Grades 7-12
Provides students with a quick and convenient method for generating sequences by using formulas or recursion. Once a sequence is generated by the computer, students can view the terms, find partial sums, or combine it with other sequences to make new ones.
Apple II+/IIe/IIc/IIgs, $59.

GEOMETRY: CONCEPTS AND PROOFS
Word Associates
Mathematics: Geometry
Grades 9-12
Algebraic problem-solving techniques are applied to angles, angle bisectors, complements/supplements, altitude and median, triangle sum, properties, proofs of isosceles and congruent triangles. Tutorial mode gives explanations for every answer choice, correct and incorrect; help screens and branching questions on important concepts. Test mode included. Average lesson 60 minutes. Keeps records. Copy protected.
Apple II+/IIe/IIc and compatibles; IBM PC and compatibles; network version available.

A GRAPHIC APPROACH TO CALCULUS
Sunburst Communications
Mathematics: Calculus
Grades 11-College
Provides students with a visual presentation of the fundamental concepts of calculus. The intention is to build powerful visual images of the graphs of functions and to see how the gradients of these graphs vary, leading to differentiation, and how the areas under the graphs vary, leading to integration.
IBM PC/PC-XT/PC-AT/PCjr, $129.

GRAPH WIZ
William K. Bradford Publishing Company
Mathematics: Trigonometry, Graphers and Plotters, Algebra
Grades 8-12
A function and relation plotter that generates and illustrates graphs of algebraic and trigonometric expressions. It will graph absolute value, exponential, logarithmic, and
most other functions and relations, including conic sections. Allows zoom out and zoom in.
Apple Macintosh 512E, Plus, SE, II, $99; network version available.

HOP TO IT!
Sunburst Communications
Mathematics: Basic Skills, Arithmetic
Grades K-3
A number line mathematics program designed to help youngsters strengthen their addition and subtraction skills. Copy protected.
Apple II+/IIe/IIc and compatibles, $65.

<IN COMMON> ARITHMETIC
Sunburst Communications
Mathematics: Basic Skills, Multiple Topics
Grades 4-6
Data files which challenge students to identify attributes, infer categories, analyze relationships, and present the basic mathematical operations with whole numbers, as well as perform addition and subtraction of simple fractions. Copy protected.
IBM PC and compatibles, $65.

MAPS AND NAVIGATION
Wings of Learning, Division of Sunburst
Mathematics: Basic Skills, Map and Globe
Grades 4-8
Students learn fundamentals of navigation to find buried treasure, avoid a hurricane, and pinpoint their ship's location in order to call for help. Culminates in Rescue Mission, a simulation in which students apply map skills and mathematical concepts to help free a humpback whale caught in a fishing net.
Apple II+/IIe/IIc/IIgs, Apple Macintosh 512E, Plus, SE, II.

MATH BLASTER MYSTERY
Davidson & Associates
Logic and Problem Solving: Mathematics, Basic Skills, Word Problems
Grades 7-10
Four activities help students develop strategies for solving word problems while building pre-algebra, logical- thinking, and problem-solving skills. Learn to apply inductive and deductive reasoning with whole numbers, fractions, decimals, percents, positive and negative numbers, interest, and pre-algebraic concepts.
Apple II+/IIe/IIc/IIgs, Apple Macintosh 512E, Plus, SE, II, IBM PC and compatibles, $49.95.

MATHEMATICS EXPLORATION TOOLKIT
IBM
Mathematics: Algebra, Geometry, Trigonometry
Grades 7-12
Performs basic mathematical and algebraic operations; also helps user graph equations, perform matrix operations, evaluate definite integrals, and manipulate trig expressions. Many worksheets and corresponding "DEFER sequences" help students strengthen their understanding of a wide range of concepts, from simple algebraic order of operation to analytic geometry. Copy protected.
IBM PC and compatibles, $224; network version available.

MATH IN THE WORKPLACE
Educational Activities
Mathematics: Consumer Math, Business, Business Math
Grades 9-12
A series of interactive skills-development and tutorial programs designed to motivate students by providing practical job-related mathematics activities. Reading levels are 3-9.
Average lesson 15 minutes. Keeps records. Copy protected.
Apple II+/IIe/IIc and compatibles, $295; network version available.

MATH SHOP JR.
Scholastic
Mathematics: Basic Skills, Word Problems
Grades 1-4
Students develop problem-solving skills involving addition, subtraction, multiplication, division, odd and even numbers, estimation, and identifying coins, in a real-world situation – a shopping mall. As they help in various stores, they use a wide range of math skills and gain an understanding of how math is applied in everyday life. Not copy protected. Network version available.
Apple Macintosh, 512E, Plus, SE, II/II+/IIe/IIc/IIgs, IBM PC and compatibles, $69.95.

MAYA MATH
Wings of Learning, Division of Sunburst
Mathematics: Basic Skills, Number Sentences, Mathematics, Number Systems and Counting
Grades 4-8
Students work as "math archaeologists" to decipher the mysterious Maya base-20 number system. To succeed, they must articulate and apply their understanding of our modern-day number system, convert Maya calendar dates to our own dates, and acquire familiarity with Maya number notation through a treasure hunt game. Part of the Second Voyage of the Mimi series.
Network version available.
Apple II+/IIe/IIc/IIgs, $75.

MICKEY'S RUNAWAY ZOO
Walt Disney Educational Media Division
Early Learning and Preschool: Mathematics, Basic Skills, Number Systems and Counting
Grades Presch-K
Oh no...Goofy left the gates open at Mickey's Petting Zoo – the menagerie is loose! Students join Mickey and Goofy on a playful hide-and-seek counting adventure through four neighborhoods as they try to gather up dozens of missing animals and bring them home again. No recordkeeping. Not copy protected.
IBM PC and compatibles, Commodore 64/128, $14.95.

MULTIPLYING WITH BALANCING BEAR
Sunburst Communications
Mathematics: Basic Skills, Arithmetic, Multiplication and Division
Grades 3-6
Students learn about number relationships in multiplication.
Copy protected.
Apple II+/IIe/IIc and compatibles, $65.

NEW MATH BLASTER PLUS
Davidson & Associates
Mathematics: Basic Skills
Grades 1-6
A game to develop basic math and problem-solving skills. Average lesson 15 minutes. Keeps records. Not copy protected.
IBM PC and compatibles, $49.95; network version available.

NUMBER MAZE - DECIMALS AND FRACTIONS
Great Wave Software
Mathematics: Basic Skills, Decimals and Percents, Fractions
Grades 3-8
Integrates the challenge of increasingly complex mazes with learning and practicing decimal and fraction problems. Hints and aids in solving problems are available. Automatically adjusts to user's abilities.
Apple Macintosh 512E, Plus, SE, II, $49.95.

PROBLEM-SOLVING WITH NIM
Minnesota Educationall Computing Corporation
Mathematics: Basic Skills, Word Problems, Logic and Problem Solving
Grades 3-8
Based on the ancient game of Nim. Helps students test their problem-solving strategies and logical-thinking skills. Four games—Fish Nim, Calculator Nim, Space Nim, and Moonlight Nim—serve as both problem-solving activity and a way to develop some basic math concepts.
Apple II+/IIe/IIc/IIgs, $59.

SUBTRACT WITH BALANCING BEAR
Sunburst Communications
Mathematics: Basic Skills, Arithmetic, Addition and Subtraction
Grades K-4
Students help Balancing Bear perform a successful balancing act as they learn the basics of subtraction. Students remove boxes from one or both sides of a balance beam to make the numbers on each side equivalent. Copy protected.
Apple II+/IIe/IIc & compatibles, $65; network version available.

TAKING CHANCES
Sunburst Communications
Mathematics: Probability
Grades 3-12
Students explore the principles of probability. Helps students learn how sampling with replacement produces different results from sampling without replacement. Copy protected.
Apple II+/IIe/IIc and compatibles, $65.

TEASERS BY TOBBS WITH INTEGERS
Wings of Learning, Division of Sunburst
Mathematics: Basic Skills, Arithmetic, Mixed
Grades 2-6
Using whole numbers or integers, presents addition and multiplication problems with one or more missing numbers. Students must then decide which number can't be, might be, or must be the one that solves the problem. To solve the addition and multiplication problems, students must also use division and subtraction.
Apple II+/IIe/IIc/IIgs, $65; network version available.

TEASERS BY TOBBS WITH WHOLE NUMBERS
Wings of Learning, Division of Sunburst
Mathematics: Basic Skills, Arithmetic, Mixed
Grades 2-6
Revised version of the original Teasers by Tobbs by Wings of Learning, features expanded change options to customize problems, a scratch pad for computations, and calculator input so that answers may be entered in equation form.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $65; network version available.

TESTING PROGRAMS
William K. Bradford Publishing Company
Mathematics: Algebra, Mathematics, General Math
Grades 7-12
Produces secondary mathematics tests. These question-banking test-construction, test-printing systems provide teachers with necessary tools to generate printed tests in a variety of test formats using existing banks of questions or by entering new questions. Four programs: General Mathematics, Pre-Algebra, Algebra I, and Algebra II.
Apple II+/IIe/IIc/IIgs, General Mathematics $150, Pre-Algebra $150, Algebra I $140, Algebra II $140.

TIMS: KOETKE'S CHALLENGE
William K. Bradford Publishing Company
Mathematics: Probability
Grades 6-9
Centers on probability game in which students are challenged to develop good strategies for winning. Students can play against each other or against the computer. When they have a good strategy, they can teach the computer to use their strategy and then test it against other strategies. Part of the TERC Investigations in Math Series.
Apple II+/IIe/IIc/IIgs, $60; network version available.

TIMS: TRIANGLE CHAOS
William K. Bradford Publishing Company
Mathematics: Geometry
Grades 7-12
Chaos and Fractals are new topics in mathematics that rely heavily on computer graphics. Based on a fractal known as the Sierpinski Triangle. Figure is formed by iterating a random process; surprising order results. Students are able to experiment with parameters and explore resulting patterns. Part of the TERC Investigations in Math Series.
Apple II+/IIe/IIc/IIgs, $60; network version available.

UNSOLVING
Sunburst Communications
Mathematics: Algebra
Grades 7-College
Allows students to explore the true menaning of solving equations or inequalities in a single variable. They may explore linear equations with solution sets that are single points on the number line and quadratic equations with solution sets that are two points on the number line. Students may also explore linear and quadratic inequalities.
IBM PC and compatibles, $65.

WEEKLY READER DECIMALS AND FRACTIONS
Weekly Reader Software/Optimum Resource
Mathematics: Basic Skills, Fractions, Decimals and Percents, Word Problems
Grades 3-7
Enhances deductive reasoning and builds arithmetic skills in an area that students often find difficult to master. Hundreds of word problems with thousands of possible number variables are divided into 25 different skill levels, each featuring the practice and mastery of a specific type of operation.
Apple II+/IIe/IIc/IIgs, $49.95.

Carousel : Key to Systemic Approach?

New software named "Carousel," developed by Adobe, is being touted by industry gurus as the best candidate yet for a universal standard for the electronic exchange of documents. An extension of Adobe's PostScript, the new software will permit effortless exchange of information between users of IBM compatibles, Windows, the Macintosh, and Unix-based computers.

In addition, Adobe has beefed up PostScript to include digital video and audio data, putting it in line to be the general standard for multi-media applications as well.

The prime objective at this time, however, is to have the platform-independent ability to move documents electronically.

Competition of sorts is already on the horizon. The Farallon Corporation is introducing "Diskpaper" for Macintosh and Windows early this year.

Carousel, according to those who have seen it demonstrated, is the best route yet to an all-digital, paperless future. Information from a variety of sources and systems would be stored on a common computer base; paper would be used only when and if a hard copy is needed, a matter of interest to conservationists as well as computer specialists.

Carousel will undoubtedly be greeted with joy by many who deal with the printed page; whether or not it is the start of something really BIG, something really *Systemic*, even Adobe can't say for sure. ❑

KAHAN ELECTED CHAIR AT ANNUAL CONSORTIUM MEET

While budget restraints kept some members of Consortium states away, those who did attend the annual meeting of the States Consortium for Improving Software Selection (SCISS) made important decisions about the future of the Consortium.

The first order of business was to accept the resignation of Rachel Moreno, the dynamic first chair of the Consortium. Ms. Moreno was always willing to help enlarge awareness of the Consortium and its benefits to educators in other states and traveled frequently to do so in person. In her letter of resignation, Ms. Moreno promised continued active support.

Nominations were opened for a new chair and Karen Kahan was unanimously elected. As a member of the Division of Educational Technology at the Texas Education Agency, Ms. Kahan has played a leading role in readying Texas for the statewide roll-out of TESS on February 21st.

The March issue of EPIEGRAM will carry Ms. Kahan's by-line story on the roll-out, with suggestions for other states, part of a growing body of information on how to establish TESS statewide. For example, Barbara Harper of Michigan brought copies of her roll-out and follow-up communications. This can save future members from having to start from scratch.

It was unanimously agreed that a more comprehensive and aggressive marketing plan would be the prime objective for 1992. Max Wilson, EPIE board member and a prime architect of the Consortium approach, pointed out that since TESS is as much concept as product, it has some unique marketing requirements. Further, since the upfront cost of $25,000 will not be found in any department of educations's budget, initial funding sources must be found (e.g., Mott Foundation in Michigan, Purdue University in Indiana).

To this end, the Consortium will create new classifications of membership with only states being allowed full (i.e., voting) membership. Spearheaded by Nancy V. Paysinger and Joey Baughman of the Georgia Department of Education, a tentative listing of titles and parameters was discussed. It included:

• Corporate members would be known as "Associate Members." Both Apple and IBM have indicated they are joining. This would give them access to TESS but only for internal purposes and with no voting rights or membership on committees.

• Foundations would be known as "Supporting Members," and would get full and continuing recognition for their contributions; but, as with corporate members, they would have no representation in the Consortium. The MacArthur Foundation and various telephone-company foundations have expressed interest in supporting SCISS by providing first-year fees for specific states.

• Smaller education units (e.g., cities or regional) which want TESS immediately and can't wait for their state educational officials to act, would be "Participating Members." They would gain full membership when their state joins.

• For standalone users, whose use of TESS is confined to a single building with no copying or network rights (a category first announced in the January EPIEGRAM), the title would be "Previewing Members."

Ken Komoski presented a list of states, institutions, and individuals who have indicated their intention to become actively involved in SCISS, and predicted that a minimum of six states will join by summer.

It was also agreed that SCISS will supply speakers and/or presentations at a variety of state, regional, and national conferences of educators who are computer users or want to be. (Anyone wishing a speaker from the States Consortium for Improving Software Selection should call Pat Lutzky at 516 728-9100.) It was also agreed that telephone conferencing would be used whenever possible to keep travel costs at a minimum.

A committee was formed to produce a video which will help new members in their training and communications activities within their states. Karen Kahan will function as Executive Producer with Earl L. Fultz, Editor of EPIEGRAM, to provide the script, and Ken Komoski, Executive Director of EPIE Institute, which manages the TESS database, as consultant and co-producer.

The general feeling of those assembled was that 1992 would prove the breakthrough year for the Consortium, with sufficient new members to support the continuing improvement and sophistication of TESS. ❑

** LATE FLASH * LATE FLASH **

Apple Joins Consortium!

As we went to press, word came from Cupertino, California that Apple Computer has become the first corporate member of the States Consortium for the Improvement of Software Selection (SCISS).

As a corporate, non-voting member, Apple will have access to the complete electronic database, known as TESS (The Educational Software Selector). TESS, which is currently updated twice a year, contains complete information on more than 11,000 K-12 software programs. Ken Komoski, Executive Director of EPIE Institute, which manages both the database and the Consortium, commended Apple for recognizing the importance of the TESS database, and for being the first in its industry to support it.

EDITOR'S NOTE: More on Apple and the Consortium next month.

The Business of Education

BROOKLYN SCHOOL BOARD CUTS RED TAPE ...LENGTHWISE.

(Lots of educators know what needs to be done; the real problem is how to get it accomplished. It helps to have clout and know how to use it.)

An investment banker and his wife, Joseph H. and Carol Reich (pronounced "rich"), found that trying to give New York City an innovative school is not easy. The "red" in their urban version of a Little Red Schoolhouse is not paint or ideology, but tape.

Even with allies with the clout of Pfizer Chemical and New York Schools Chancellor Joseph A. Fernandez, a vocal supporter, it has been a two-year struggle and it's not over yet.

The school, to be housed in a 40,000-square-foot building in Brooklyn donated by Pfizer, is undergoing renovations with seed money from the Reichs ($500,000, much of it their own) and a similar amount from Pfizer. The objective is to open the school in September, initially at the kindergarten level, with grades added as rapidly as possible for an eventual enrollment of 350.

The school will be run by a board of parents and trustees with teachers from nearby public schools advising the faculty. Students from these same schools will provide tutoring. It will be, in effect, a private school run with public funds.

The idea for the school evolved from the Reichs experience with "adopting" two sixth-grade classes as part of Eugene Lang's innovative "I Have A Dream" program to provide college educations for deserving disadvantaged students. The Reichs found that many of the sixth graders were so far behind in basic skills such as reading, language, and math that the promise of a college education was meaningless.

Long before presenting the plan to the seven members of the Board of Education in November, 1991—all seven of whom responded enthusiastically—the Reichs and their allies have been running into bureaucratic roadblocks and red tape from officials of the local school district who saw the project only in terms of turf.

Typical of the in-fighting were questions about the number of windows per room and the height of the urinals, as well as a four-page mandate which included such specifics as the percentage of first-year instruction in a student's native language, English or Spanish (70%), in a second language (20%) and in a mix of the two (10%). This, of course, is precisely what the Reichs feel is best left up to the parent-trustee board.

To get the business point of view, EPIEGRAM interviewed Tom Kline, Manager of Pfizer's sprawling 17-acre plant in the heart of Williamsburg, Pennsylvania. Pfizer has been there since 1849 and has no intention of moving out. Following are key points made by Mr. Kline:

- Pfizer hires from Brooklyn and the New York area and has a real need for competent, motivated employees.
- Many of the people we try to hire lack appropriate reading skills, and basic math/computations ability.
- I (Tom Kline) feel schools should focus first on providing students with basic skills; without those, they can't learn higher skills.
- Schools must emphasize basic values as well as education. A lack of discipline is very destructive - to the person and to the community.
- Parent involvement is essential. Many schools seem to discourage parents from taking part.
- We need goals for our schools and accountability, not just for educators but for all of us who live in the community.
- We should challenge the whole concept of public education when it fails so consistently to educate. Why are we so firm on the word "public" if "public" is failing minorities and the disadvantaged?

The school opens in September.

§

PUBLIC ED BURNOUTS FIND CAREERS IN BUSINESS

Educators who are frustrated with trying to effect change from the inside should consider jobs as "Education Manager" in business.

Career specialists note that this new job category has evolved at large corporations that want to aid education, both nationally and in communities where they have plants or branch offices. Increasingly, small and medium-sized companies are considering similar approaches.

In a survey of companies with median revenues in excess of $2.5 billion, almost all indicated they had at least one person responsible for management and coordination of outside education-reform or education-support programs. Some of them report directly to top management, an indication of the importance business is putting on education.

The philosophy of business help varies considerably. Many businesses have some kind of program to help local schools in communities where they have a presence; others prefer to work at a national level, supporting organizations that have broad objectives. Some work through local managers, some through foundations (EPIE Institute, for example, has received important support from the MacArthur, Ford, Carnegie, and Alton Jones Foundations).

Educational assistance by business has been haphazard; but there is a growing professionalism, typified by the emerging campaign from the U.S. Chamber of Commerce.

(The next edition of EPIEGRAM will present the behind-the-scenes story of the Chamber of Commerce's push to get businesses involved locally.) □

Views & Reviews

Let It Ride, by Samuel F. Pickering Jr. 177 pp. Columbia: University of Missouri Press. $19.95

ROBIN WILLIAMS RESTRAINED, says live model for "Dead Poets Society" in modest book that doesn't tell all.

Samuel F. Pickering Jr., the teacher who inspired screenwriter Tom Schulman to write *Dead Poets Society*, the movie which starred Robin Williams, says he liked the movie but that actor Robin Williams was more restrained and a great deal more sensible than he had been when Schulman was in his class some 25 years ago.

Currently a teacher of English at the Storrs Campus of the University of Connecticut, Pickering found life changed considerably after the movie. There were offers for speaking engagements, to run for political office, a chance to be headmaster at a private school with all the perks. He rejected them all.

"I'm too old to live life anywhere near to the fullest," writes Pickering, 50, who nevertheless appears to be following in the path of Thoreau. His spare time is spent exploring the woods and pond near the Storrs campus or at the family summer home in Nova Scotia. A quiet life, but not of desperation.

Pickering is pleased that he can see some of himself in the Robin Williams portrayal and that he touched young lives in important ways. It's good that the country be reminded from time to time just how much influence a good teacher can have.

THUMBNAIL REVIEWS

Headline Harry and The Great Paper Chase. MS-DOS from Davidson & Associates, P. O. Box 2961, Torrance, California. $49.95 for 16- color version; $59.95 for 256-color version. Players take role of a good-guy journalist for the U.S. Daily Star competing against dirtbag reporter for the Diabolical Daily in effort to get scoop. Modeled after Carmen Sandiego series, it helps students investigate American cultural and historical events of the past 40 years.

PLUS. Entertaining, challenging. Students get rewarded with hard copy of news story they uncover.

MINUS. Some may find too much trivia; adding new information is done in way which can give game away; Q&A format slows game; pushes RAM requirements and some 640K computers will struggle with 256-color version.

FOREWARNING. Students weak in history and geography should be forearmed with reference books.

(Adapted from review in *Technology & Learning*.)

The newest addition to MECC's Science Inquiry Collection, **Wooly Bounce**, builds on fact that balls bounce and different balls bounce differently. Apple II, grades K-2, science. MECC, 6160 Summit Drive North, Minneapolis, Minnesota 55430-4003. $59.

Has two sections with four levels of difficulty as students explore relationships between type of ball and surfaces, graphically displayed. Various experiments built around the variables as students help Wooly learn.

The reviewer felt **Wooly Bounce** succeeded because it got across important concepts without complex explanations.

Game had no ending point, however, and more flexibility in data display would have helped. Good teacher's guide; topic of interest to children and simple enough for kindergarten but challenging enough for second graders.

(Adapted from *Technology & Learning*.)

Tom Snyder Productions gets glowing reports on **The Other Side**, its classroom game for grades 5 and up. Two negotiating teams each seeks to build its own economy and suffers the consequences when things go awry.❑

NON-VERBAL LEARNING DISABILITIES: A PROFILE

Learning disabilities, largely unrecognized a generation ago, are being refined into sub-groups; one of particular interest is "non-verbal learning disabilities," since it helps explain why some students have difficulty in high school where they must organize and assimilate much larger amounts of material. One characteristic of NLD students is that they excel in rote verbal learning (e.g., phonics and spelling), skills prized in the early years.

The profile of such a student might also include:

- difficulty in learning from visual environment;
- discrepancy between verbal and performance IQ;
- difficulty placing events in order, understanding cause and effect relationships;
- lacking flexibility and sensitivity to subtlety and nuance in language;
- approaching tasks rigidly and having difficulty transferring previously-learned information to new tasks.

While symptoms and treatments can be greatly varied, most NLDers respond to structure, clear expectations, and consistency at home and school.

Research & Reports

Two scientists at the National Institutes of Health in Bethesda, Maryland, are causing great disturbances in the scientific community with their euphemistically termed "misconduct machine." Simply put, it is a set of computer programs which allow them to compare documents and determine if plagiarism is involved.

Dr. Ned Feder and Mr. Walter Stewart, the designers, are not garnering much applause from fellow scientists. In a world where "publish or perish" is no idle phrase, there is a suspicion that more than a few writers have borrowed without sufficient attribution. On the whole, the two men say, out and out plagiarism is quite rare, and when it does happen, it tends to be from obscure sources and dead authors.

The old rule still stands: "Borrow from one and it's plagiarism; borrow from ten and its research."

ALL IN THE FAMILY. Tim Sanders of Milledgville, Georgia, received 800, the highest possible score, on the math portion of the Scholastic Aptitude Test (SAT), but it was no big deal — both his brothers, Mark and Dan, had previously scored 800. The fact that both parents were math majors may have helped. The father, Hugh, is a math teacher at Georgia College and the mother, Joanna, is a store manager who also repairs computers. The home environment, they say, was one of considerable challenge in mathematics and puzzles and technical games.

For the record, of the more than one million students who took the SAT last year, only 1,025 scored a perfect 800. Let's see, that's <0.001025%. *continued on next page*

Genius is, above all, constant doubting.
– Stanislav Lem, *His Master's Voice*.

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IBM *continued from front page*

to IBM (see below), and this is going to give IBM unprecedented muscle in the education marketplace.

The question, of course, is whether IBM will follow Mr. Ruskin's advice. Will IBM sales reps be so enamored with selling big ticket items (e.g., a management system for food services) that they will forget—or never learn—the need for a *systemic* approach ? In the rush to make quota, will they sell standalone systems that don't connect with other technology, which cost more and do less?

In the world of education, where, as Ken Komoski notes in his column, only about 1% of a school budget is spent on educational materials and technology, will IBM put emphasis on helping teachers (as the name, EDUQUEST suggests), or merely support management? If the latter, why set up a new division? Or why not call it "QUOTAQUEST?"

We'll be watching. We hope that IBM does the right thing. Some fine words were spoken at the Conference, and we want to believe that in the future IBM will put statesmanship ahead of—or at least on a par with—salesmanship. We hope that IBM takes the long view because education needs someone with the muscle of Big Blue to help *form* the market, not just supply it. ❑

The Director's Column
continued from front page

I've gotten estimates that range as high as 15% and as low as 3% but the dirty little secret of education is that nationally, on average, only *one per cent* of a school's budget is spent on instructional materials – from textbooks to high-tech computer, software, and video. Yes, incredible as it sounds, 99% of the school budget goes for everything *but* the tools of teaching and learning. Yet, for 20 years, research has shown that the materials purchased with this 1% of the budget are used during more than 90% of all classroom instruction.

Why this sorry state of affairs? There are a lot of reasons. One is the long tradition which makes the teacher the prime carrier of information. It's a Norman Rockwell view – the blackboard, some chalk, a tattered textbook and a dedicated teacher. With all the talk about technology in the classroom, most classroom time is still textbook-based.

Teachers know this best. It is common knowledge that teachers reach into their own pockets to buy nontextbook materials for the classrooms (estimates range between $200 and $600 a year). Research shows that textbooks and curriculum align less than 50% of the time.

Another part of the problem is that the purchase of teaching materials is in fragments. Textbooks are in one budget, computer software in another, video in a third and so on – no one ever looks at the whole picture and sees how little of a school's budget is actually being spent on the tools of teaching and learning.

Another part of the problem is that there is no single school advocate for instructional resources. The coach pushes sports (getting a sympathetic ear since 7 out of 10 administrators come from Phys Ed); teachers have their union looking out for their salary share of the budget; the drama and music departments, the manager of the cafeteria, the person in charge of transportation, the custodian – everyone is pushing for a piece of the pie.

But no one is similarly responsible for all the teaching materials. There's an old adage: "When everyone's in charge, no one's in charge," and it certainly applies here.

I believe the budget for educational materials and technology must be at least doubled. In saying this, however, I am not advocating the old American custom of throwing money at a problem. If we double the money spent on teaching resources without also doubling the efforts to create and select high-quality materials for learning, schools will simply waste the additional money.

What to do? The first step is to find the money; the second is to spend it properly.

The money: is there an administration or community around that can't squeeze an additional 1% out of the other 99% of the school budget? (More on this in future columns.)

Even more important than finding the money is to spend whatever is available wisely and well. This is more difficult; it involves curriclum analysis and the selection of educational materials that truly align with the curriculum.

Here is, you see, dirty little secret #2 – that rarely do a school's textbooks and other materials align with its curriculum by more than 60%. Shocking but true. No matter what a school *says* it is teaching, the likelihood is that the teacher isn't using teaching tools that align with the school's curriculum.

So there you have it. The two dirty little secrets of education that no one wants to talk about. But talk we must if there is to be any true change in education. And we must act. We must a) squeeze another 1% from the budget (energy and administration is a good place to start); b) admit how much of the curriculum is actually being taught; and c) use the new technologies to fill in the gaps.

None of these is an earth-shattering idea; none of the three steps to be taken requires great leadership skills or special knowledge, no grants are needed nor is there any great dislocation of the status quo. All that is required is the desire to take that first step. ❑

The time is out of joint.
– Hamlet.

If you're an EPIEGRAM subscriber, you're in good company. The U. S. Department of Labor, the National Geographic Society, The Smithsonian, Harvard University, the U. S. Military Academy at West Point, the Walt Disney Company, and the Ministry of Education of Singapore are also on the rolls. EPIEGRAM has subscribers in 49 of the 50 U.S. States. We're still missing South Dakota; but nobody lives there anyway. Besides Singapore and the U.S., you'll find copies of EPIEGRAM in Canada, Mexico, Great Britain, Australia, and Japan.

Whopper Grant for Teach for America

Teach For America, which started as a senior thesis when Wendy Kopp was at Princeton, and which has not yet had its third birthday, got its biggest grant yet ($3 million in matching funds) from the giant (40 billion plus in sales) Philip Morris companies.

The not-for-profit organization, which already has an annual budget of $7 million, searches out promising college graduates, most of whom never thought of teaching, and places them in some of the most difficult teaching environments in the country. The group will have some 1,150 teachers working at 10 sites in the year ahead, including schools in such diverse areas as the District of Columbia and rural Tennessee.

Ms. Kopp's organization, whose objective is to invigorate the teaching profession, has had to exist on small grants of $25,000 or less, and the 24-year-old founder admits her group has been so busy putting out fires that it has sacrificed long-term stability.

Teach For America values its independence and won't accept grants if there are strings attached. So far it has received no government money. ❑

Gleanings

A CALCULATED DECISION

After much agonizing, Educational Testing Service has announced that use of handheld calculators will be permitted on PSAT/NMSQT tests in 1993 and on SAT-I beginning in 1994.

While there was considerable concern that students in inner-city and rural schools would be at a disadvantage, strong support from high school and college mathematics faculty on the College Board committees carried the day.

The Scholastic Aptitude Test (SAT) was created to help colleges make admissions decisions without the student taking a different test for each school application. When it was first used in 1926, the SAT was given to a mere 8,000 students; the number now runs to more than 1.8 million annually.

¶

READIN', 'RITIN', & RHETORIC

While the President has called on America to be first in mathematics and science by the year 2000, some third-grade arithmetic reveals that students who will graduate high school in that first year of the 21st Century are already in the 4th grade.

Many experts agree with Casey Murrow (the Teacher's Laboratory) who says, unequivocally, that unless a student is well grounded in math by the 4th grade, it is unlikely the student will become proficient in math or science in subsequent years. "Once the student gets behind on math," says Murrow, "it is almost impossible to catch up."

ADDENDUM: By the turn of the century, 10% of beginning students will lack English-language proficiency.

Math survey of eighth graders reported in the New York *Times*, shows no states are "cutting it."

The ratio of students to computers in public schools is now 20 to 1, a change from 125 to 1 in 1983.

Public opinion polls show the public in favor of national goals, standards, and tests.

"Employers basically don't want to hire kids right out of high school; they want them to ripen a bit," says Lauren Resnick, researcher working with Secretary's Commission on Achieving Necessary Skills (SCANS).

¶

GET SMART

In order to play a productive role in the increasingly complex industrial world that came into being in the 19th century, workers had to learn how to read and write. ... In 1800 the average American attended school only 82 days in an entire lifetime; this had grown to only 208 days by 1840. Real educational progress in the U.S. has been quite recent. Only 6% of American children graduated from high school in 1900 and only one out of every eight Americans at work in 1930 had ever attended high school....

Now we realize that our workers require more general education and more technical schooling if they are to function in an increasingly high-tech society. As Zuboff (1988) said: "Smart machines require smart workers."

– Melvin Kranzberg in the Autumn 1991 issue of *Theory into Practice*.

¶

CROCODILE TIERS?

If substantial progress is not made, public education stands to suffer a loss of political and financial support far greater than it did in the 1970s. Public education would not disappear...but it would likely degenerate into an educational backwater, supplying a second-rate education to primarily disadvantaged students...a dumping ground in an increasingly two-tiered society.

– Louis Toch, Epilogue to *In the Name of Excellence*.

¶

THE END OF INNOCENCE

Standing here by the Ohio River...one is struck by the sheer beauty of this country, of its goodness and unrealized goodness, of the limitless potential that it holds to render life rewarding within this country. It is a tragedy that these good things are not more widely shared. All our children ought to be allowed a stake in the enormous richness of America. Whether they are born poor to white Appalachians or to wealthy Texans, to poor black people in the Bronx or to rich people in Manhasset or Winnetka, they are all quite wonderful and innocent when they are small. We soil them needlessly.

– Jonathan Kozol, *Savage Inequalities*.

¶

READ HER LIPS

Expanding on her campaign to promote literacy and reading, the First Lady, Barbara Bush, shares some of her favorite children's stories in a radio program entitled "Mrs. Bush's Story Time." The program, produced by ABC News in conjunction with the Children's Literacy Initiative, airs on the ABC radio network and features such celebrity guests as Bugs Bunny and Big Bird. Check local listings for air times.

¶

HARASS-MENT OR HA-*RASS*-MENT....

The word is much on everyone's mind these days and on the tube, as well, as Phil, Oprah and Sally maximize the titillation factor over what really goes on between the sexes in the workplace. Much of their emphasis is on the office but schools are workplaces, too, and anyone faced with the problem might find a book by Susan Webb, a human relations expert, useful and instructive. The book, *Step Forward*, is the first authoritative commentary on sexual harassment since the nation was transfixed by the recent Thomas hearings, and is designed to help the reader define and recognize it and present ways to deal with it effectively.

Step Forward, published by Master Media. $9.95

¶

IGUANA HAZARD

Teachers with reptiles in the classroom, take note. The U.S. Centers for Disease Control have warned that children should wash their hands after touching lizards.

In 1990 two cases of salmonella poisoning only eighty miles apart were reported in Indiana infants when the Hoosier tots played with their respective family's pet iguana. (By the way, is something going on in Indiana that we don't know about?)

"Lizards carry a wide variety of salmonella," the agency reported. So grab your skink if you must, but wash up afterwards.

No word yet on how to handle a thesaurus.

Rights continued from front page.

A good place to start in finding out about copyright is AIME (the Association for Information Media and Equipment), which has a copyright hotline and a modestly priced ($7.50) packet which offers ideas and suggestions for development or revision of copyright policy in schools, libraries, and institutions.

Write or call AIME, P. O. Box 865, Elkader, Iowa 52043; business phone 319 245-1361; Copyright Hot Line 800 444-4203. You will learn what is copyrightable (just about everything which is literary, musical, dramatic, pictorial, cinematic, audio, or video); and what is not (names, titles, slogans, familiar designs, blank forms, and so on).

There is something called "fair use" (material such as news reporting, teaching, scholarly research), but it cannot be interpreted as carte blanche even for not-for-profits or educational purposes.

The amount used is important and use of an entire work (e.g., wholesale copying) can *never* be fair use, even when there is no intent to infringe on a copyright.

Teachers, for example, can make single copies of a chapter of a book, periodical, etc.,to teach a class. Multiple copies can be made if it meets criteria of brevity (less than 10% of content), spontaneity (no time to request a copy), and cumulative effect (copying for one course only).

You can't copy:

- to substitute for purchase or replacement.- workbooks, exercises, standardized tests or answer sheets;
- the same item term after term;
- if there is a charge to the students beyond photocopy cost;
- to create, replace, or substitute for anthologies, compilations, or collective works.

Guidelines for Videotaping include:

- off-air recording applies only to non-profit educational use;
- videotape may be kept for only 45 calendar days, then erased;
- videotape must be shown to student during the first 10 schooldays after recording date but may be repeated for reinforcement.;
- off-air recordings may not be edited or combined with other recordings to create an anthology or a new work.

Rules for Public Broadcasting programs are less stringent but such programs may not be shared outside the school or kept for more than seven days and, of course, must be used only for instruction.

"For Home Use Only" videotapes raise the question whether they can be used in a classroom, and this will have to be resolved by a court case. It appears that a teacher could use a "home use only" videotape in a classroom but only for instructional purposes and not for entertainment.

This same caveat against use for entertainment or recreational purposes applies to any audiovisual material. Also, transmission from an outside location or viewing by an audience other than students, even when a teacher is present, may also be verboten.

Copyright is very complex legally; but real probelms arise only when the user is trying to see how close he or she can get to the edge without falling over.

Generally, commonsense will show the way. Don't try to avoid buying additional copies; don't copy too much; make certain it is for instructional purposes; don't keep copying the same material year after year; get rid of copies after use; respect the rights of the creators.❑

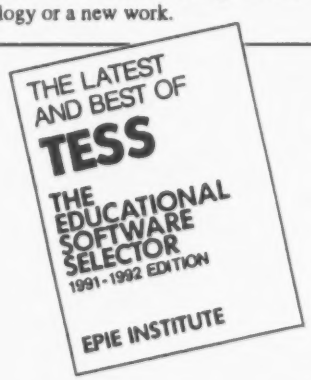
FAX POPULI

516 • 765/2544

"Disagree with your statement on page 3 [January EPIEGRAM, article on Distance Learning, which said that facilitators, sometimes parents, could be used in place of certified teachers]. See our State Board of Education directive: '...the teacher/facilitator assigned to the classroom is expected to be appropriately certified but not necessarily qualified in the subject area being transmitted to the students he/she is supervising.'"

Dr. Margaret Moore
Community Unit #3
Harrisburg, Illinois

Editor: Schools with tight budgets are accepting help from uncertified but qualified sources, e.g., retirees and parents with practical, hands-on knowledge of subjects involved. Rules and regulations whose prime purpose is to preserve the status quo can be a barrier to innovation and systemic change.



The 1991-92 edition of *The Latest and Best of TESS* describes in detail more than 2,500 software products, including both highly-rated "classics" and those most recently added to the TESS database.

EPIE Institute editors have culled from the complete electronic database (more than 11,000 entries) those programs which have had a large number of positive evaluations by respected review sources, as well as those programs published most recently.

The book provides all relevant information such as program type, grade level, curricular function, intended audience, scope, user grouping, description of program content and operation, product components, equipment configurations, supplier name, price, review citations, and user-site address.

An important feature of the 400-page volume is a section of summary descriptions of seven major Integrated Learning Systems (ILS) based on a major in-depth study by EPIE Institute.

The Latest and Best of TESS may be obtained for $49.95 plus $5.00 shipping & handling. Send check or purchase order to the Sterling Harbor Press, P. O. Box 28, Greenport, New York 11944. You can phone in your order to 516 477-0065; or better yet, fax it to 516 477-0062.

(*The EPIE Report on Integrated Learning Systems* is available on special order. The cost is $250. Delivery in 3-4 weeks.)

Are you forced to share your copy of EPIEGRAM? With several other educators? Twenty? Does it come back from cafeteria with tomato sauce all over it? Or are you one of the twenty, thirty, or a thousand who are suffering the burden of *borrowing* someone's treasured copy of EPIEGRAM? The solution is simple. Extra subscriptions to the same address cost only $30 a year. It's cheaper than making copies, too.

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P.O. Box 28,
Greenport, N.Y. 11944

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June

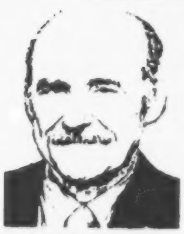
EPIEgram

The Newsletter of Systemic Change.

Earl L. Fultz, Editor & Publisher | Volume 18, No. 6 | March 1992

The Director's Column

"HOOKED ON PHONICS" *PRO & CON*



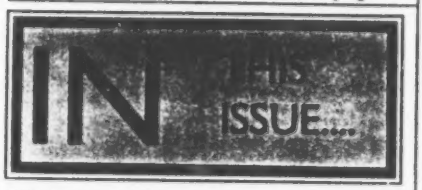
Ken Komoski
EPIE Institute

Mention "Hooked On Phonics" to most educators and they will heap scorn and vituperation on it. Indeed, that was my first reaction, too.

There's plenty to be annoyed about – the price for one thing. $179.50 for a product of questionable educational value! That's about three time more than most school systems spend on *all* educational material and technology per student per year!

As noted in my column last month, only rarely does a school spend more than 1% of its total budget on teaching materials – which works out to $50-60 per student.

turn to page 19



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AAUW REPORT SAYS SYSTEMIC CHANGE IS NEEDED TO END SEXUAL INEQUALITY IN SCHOOLS

Editorial Note. *As if the national report card on schools was not bad enough, the landmark AAUW report, "How Schools Shortchange Girls," is an even further and damning indictment of how the educational system casually wastes the potential of our young, this time females. Not all the comment has been in favor of the report.*

Key Points Made in the Report:

- Girls receive *significantly* less attention from classroom teachers, male or female, than do boys.
- Loss of self-confidence in girls is twice that for boys as they move from childhood to adolescence.
- Sexual harassment of girls by boys in schools — from innuendo to actual assault — is increasing.
- Less than a third of students identified as emotionally disturbed are female.
- African-American girls have even fewer interactions with teachers than do white girls – despite evidence that they attempt to initiate such interaction more often.
- While scores in lower grades of girls from lower socioeconomic groups are somewhat better than for boys from the same background, these differences disappear by high school.
- Among high-socioeconomic-status students, boys generally outperform girls regardless of race or ethnicity.

turn to page 18

Math Experts Say Revolution Is Now at the Barricades

Noting that a revolution is in the making, mathematics experts say that talk about math standards is beginning to be replaced by action.

Issued by the National Council of Teachers of Mathematics (NCTM), the "Curriculum and Evaluation Standards for School Mathematics" is being used as the basis for remodeling mathematics curriculums and assessments. Advocates admit, that it has yet to create the hoped-for revolution, but point out that leadership states (e.g., California, Ohio, Maryland) are rewriting their math curriculum, and proclaim that the revolution has begun.

What's different? The major effort is to remove computation from its reigning role in mathematics curricula and make it serve

turn to page 18

Your Consortium and Software Update Begins on Page 5
Featuring the TESS In-Basket of
***The Latest* Educational Software!**

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Editorial

CYNICISM – THE NATIONAL DISEASE

Cynicism is one of those words which started out well.

A Cynic, originally, was one of a Greek school of philosophers who taught that Virtue is the only Good and that its essence lies in Self-Control and Independence.

One could make a pretty good case for that.

However, later Cynics were violent critics of social customs and other philosophies; the word began to mean "fault-finding, captious critic; a misanthrope;" and, finally, "one who believes that human conduct is motivated wholly by self-interest." (*Webster's New Collegiate* notes that "cynic" derives from the Greek word *kynikos*, meaning "dog-like.")

Thus, the meaning changed from someone who took a positive and long-range view of life to exactly the opposite, someone "contemptuously distrustful of human nature and motives."

A fellow named Johnson, an editorial writer for the Baltimore *Sun*, had a more contemporary definition: "Cynicism," he wrote, "means to do only that which is *immediately and obviously profitable*."

Immediately and obviously profitable. A synonym for cynicism might be "streetwise," a ghetto term which gained much favor on Wall Street, in boardrooms across America and, its most exquisite flowering, in politics and among public servants.

To be "street-wise," which is to say doing only that which is *immediately and obviously profitable*, has become a term of approval, of praise. When the late Henry Ford II was asked why Ford didn't build small, gas-conserving cars, his streetwise answer was: "Mini-cars mean mini-profits." This was 25 years ago. Detroit is in deeper trouble than ever and being cynical is what got it there.

We'll leave it to you to choose your favorite examples of political cynicism but will note that "sound bites" and "spin control" are birds that ultimately come home to roost, and that not only patriotism can be the last refuge of a scoundrel.

And what of education? Behind all the fine-sounding words, the surveys and the pronouncements, the headlines and the empowerments, the theories, the quick fixes, the crusades, does anything really change for the better?

Can one escape the times in which one lives? Not easily. During the Cold War, we all had a bit of an "evil empire" attitude. Few of us wear "boaters" or platform shoes. In a cynical age, cynicism is the most obvious and acceptable defense, like protective coloration is for a pheasant.

And yet....

The full quote from Mr. Johnson of the Baltimore *Sun* is:

> *Cynicism, which means to do only that which is immediately and obviously profitable, is an acceptable philosophy, perhaps, but DREARY.*

And the reason cynicism was DREARY, he said, was because when one looks only for the immediately profitably, there is no vision for the future, no building for the future, because cynics—and here's the real problem—cynics don't believe in the future.

Cynicism can be very subtle. And very destructive. Especially in education. Kids aren't dumb. They learn things we don't even know they are being taught. Such as being cynical.

Earl L. Fultz
Editor & Publisher

Research & Reports

VENI, VIDI, VICI

One of the academic surprises of the season is an upsurge in students taking Latin, some 400,000 nationwide (public and private). One reason: research shows students who study Latin for three years averaged almost 150 points higher on verbal SAT. Also, Hispanic students have a natural advantage of a Latin-based language, and high scores can be their first real academic achievements among the Anglos.

One result: a shortage of Latin teachers.

"Code Oriented" vs. "Meaning Oriented"

Scrape away the jargon in some recent reports and it becomes clear the controversy on how to teach reading is not about to abate. (See "Hooked On Phonics" commentary in Ken Komoski column.)

Three studies in the *Journal of Educational Psychology* (12/91) comparing the merits of a "code oriented" (phonics) approach to "meaning oriented" (whole language), suggest those staking out extreme positions should come back together, because kids are different and no single approach is best.

Professor Procrustes

The National Research Center on the Gifted and Talented (funded by the U.S. Education Department), has announced that gifted elementary school students are not being challenged in the classroom (i.e., they're being bored into a jaundiced stupor). With funding down for resource rooms for the gifted, estimates are that the plight of the best and brightest will worsen. Suggested fixes such as grouping by ability outrage those holding the philosophy that public schools should "teach the same thing, to all students, at the same time," who respond with cries of elitism. It might be pointed out, however, that the socioeconomic elite do not send their children to public schools; so that by forcing a rigid equality upon all public-school students, what one is really doing is specifically squashing the aspirations of exceptional persons amongst the unprivileged. Thus the irony is that those who cry "elitism!" at special classes for the gifted, may be serving the interests of a less desirable elitism – that of economic classes.

Business Training for Principals

Principals are being trained alongside business people at Carnegie Mellon University's School of Urban and Public Affairs. Lacking a school of education, the University has designed a new approach which treats schools as businesses requiring business-style training. It's the brainchild of Harry R. Faulk, assistant dean and director of the school, himself a former teacher, principal, and superintendent. Principals in training are reported enthusiastic.

1970s Hangover

As many as 150 school boards currently have student representatives, the result of 1970s student demands. There's even a conference scheduled in May of the Student Reform Coalition and sponsors predict at least 200 attendees.

California, the trend-setter state, passed legislation last year allowing students to petition their local board for representation.

Does it make a difference? Students involved say the politics of education can be frustrating. However, even if there aren't any direct and obvious benefits from having students on school boards, there are those who think—as in the old joke of trying to revive an expired actor with chicken soup—"It couldn't hoit."

Dyslexia Not Unalterable

A study in the *New England Journal of Medicine* is causing experts on dyslexia to change their views that it is an unalterable disability. The prevailing view has been that dyslexic children were different from their peers forever. Recent research shows that many children, especially those on the boundaries of the dyslexic group, move in and out, showing the symptoms in the early grades but not as they get older. Or sometimes the reverse is true.

The problem, which the World Federation of Neurology describes as "difficulty in learning to read despite conventional instruction, adequate intelligence and sociocultural opportunity," affects an estimated 10% of American children and is thought to have a neurological basis. Researchers, however, still do not know what the dynamics of the disorder are which lead to the surprising variability with age.

"Rommies?"

The three best-selling CD-ROM disks for the fourth quarter, according to the Bureau of Electronic Publishing, a distributor of CD-ROM titles were: Grolier Electronic Encyclopedia, Magazine Rack, and U.S. History on CD-ROM. Of the top ten titles, all work on IBM PC; four on Macintosh.

Texas Hits Publisher for Errors

Fines levied by the Texas Board of Education for errors found in new history textbooks "approved" for the Longhorn State are still climbing – to $356,000, from the $223,000 cited when the scandal first came to light.

What is usually a private process became public in November when two long-time textbook watchdogs from East Texas, Mel and Norma Gabler, pointed out over 200 factual boners. A spokesperson for the Board noted that publishers have been fined in the past for shortages and missed deadlines, but that a fine for chuckleheaded editing is a first.

Financially, it could have been worse for the publishers. Texas is letting them pay the fine with more textbooks instead of cash. The question is...who wants them?

Overhaul Overdue

More than half of the Americans questioned in a Lou Harris poll for Scholastic wanted the educational system overhauled, and nearly three-fourths believed that teachers, rather than legislatured or school boards, should do the job. Not asked: what to do if teachers and administrators aren't reform-minded?

"I worry about a country where the bombs are smarter than the high-school graduates. At least the bombs could find Iraq on a world map."

– A. Whitney Brown.

Business & Education

OF SYSTEMS AND SYSTEMICS...

People and institutions that may just be doing it right.

Editor's Note. Business people desperately want to help improve education – which in the past often meant taking action before thinking things through. Understandable. Faced with the often appalling inaction of education, business people instinctively know that any action can be preferable to NO action since once underway, one can always course correct...very difficult to do if you haven't left the dock.

Money has been wasted, no doubt of it; examples of computers suddenly arriving without any thought or budget for software was not an infrequent occurrence. However, business is rapidly getting more sophisticated and successes are starting to happen. We're not about to call them a thousand points of light but we do hope to document some instances where business and education—and government, too—get together and do the right thing.

Pzzt... Job Corps is a Quiet Success

Sixty-two thousand annual Job Corps successes may not sound like much when there are more than 5,000,000 impoverished young men and women needing help – in fact it represents only .0124%. But of those who do graduate (the average schooling is about 10 months), 67% get jobs and 17% go on to higher education – and these statistics include the 4 in 10 students who quit or get kicked out of the program in the first three months, generally for drugs or weapons charges.

Job Corps, which has been defined as "a mix of vocational training, boarding school and boot camp," is gaining new attention as one Federal program that actually works ("Headstart" is another, both carryovers from LBJ.) It represents a unique partnership in which the Federal Government sets the guidelines for the programs, private corporations run the centers, and unions and trade groups train the students and help them find work. For example, the National Association of Home Builders found jobs for 7,000 graduates in 1991 and has placed more than 121,000 since the early '60s.

Early in his first term, President Reagan tried to eliminate Job Corps, citing the cost per student as approaching that of going to Harvard. Even enthusiasts admit it is expensive, some $18,000 a year (Harvard is over $23,000), but point out that the per person cost at a juvenile detention facility or drug rehab center is almost $30,000. Orrin Hatch, Utah conservative, was ranking Republican on the Senate Labor and Human Resources Committee and is generally recognized as the savior of the program.

Officials at the Department of Labor, which manages the Job Corps, would like to see expansion; but not at the cost of diminishing effectiveness. The Federal budget for the next fiscal year calls for $910 million for Job Corps, down slightly from 1992. A coalition of organizations led by the National Association of Home Builders and the Children's Defense Fund is calling for 50 additional centers by the year 2000, an expansion which would cost more than $1.16 billion.

Gordon Berlin of the Manpower Demonstration Research Corporation in New York, which evaluates and develops social programs, has stated: "The single most important social policy issue facing this country is what to do about disadvantaged youth. Job Corps is the only thing that seems to make a difference. This is right under our noses, and it's surprising to me we haven't given it more time and attention. It's a very valuable resource. Why not double Job Corps?"

WHERE THE COMPASS POINTS SOUTH

...a play in three acts.

Prologue: The stage manager comes out to announce that U.S. corporat ons spend more than $60 billion annually training employees, and that two- and four-y ar colleges and universities spend less than $35 billion preparing students for the workplace. Poses question: would a systemic and reasoned partnership result in a better use of resources and better-trained graduates?

ACT I

SCENE I

Offices of Total System Services, Inc., in Georgia, second-largest processor of credit cards in the country. Establish problem of finding workers skilled in information technology. Importing doesn't work; costly, high attrition. What to do?

SCENE II

Establish that success of Georgia's "Quickstart" program, first "white collar" job-training program (resulting in LIFT award from Dept. of Labor to Total Systems) shows direction for more advanced cooperation between business and education. Code name: "Compass." Objective: to combine advanced theoretical classroom instruction with effective practical instruction using latest information technology.

ACT II

SCENE I

Cooperative $6-million program set up with major partners being Columbus College (4,600-student liberal-arts school, strong in math and science), IBM, and Total System Services. IBM contributing $2.5 million of computers and software through grants and discounts; Total System to provide access to mainframe computers and technical support; Columbus College to develop new curriculum in applied computer science. Goal: to graduate students with associate or bachelor's degrees who will begin employment with sponsoring companies without additional training.

SCENE II

Establish that cost is $9,600 annually per student; that this buys equivalent of two years of college education; that student is employable after one year; that student owes sponsor two years of service if he or she receives an A.A.S. degree, three years for a B.S.; that terms of final agreement are between the student and the sponsor; that sponsor and student begin career counseling and tailoring of curriculum in first year; and that virtue of program is that sponsor gains an entry-level employee with a valuable and specific skill-set that requires very little new-hire training.

ACT III

(To be written. One hundred are chosen from more than 1,000 applicants; 50 will begin study in fall quarter. EPIEGRAM will report on which way COMPASS is pointing for an enterprise which shows some creditable systemic thinking.)

BLACK HISTORY SUPPORT... SOFT SELL OR SOFT SOAP?

The company: Colgate Palmolive. The promotion: "Models of Excellence," which picks up on the U.S. Post Office's Black Heritage Series, and offers a poster and guidebook free to consumers who send in proofs of purchase of participating C-P products.

One dollar will be donated to the United Negro College Fund for each poster and guidebook ordered. C-P has also made a pledge of $100,000 to UNCF on the national level, $25,000 to go to Illinois where it will be used to send five youngsters to UNCF-member colleges. The promotion will also involve various supermarket and drug chains and will have newspaper and radio advertising, an awards dinner, and the usual accoutrement and equipage of a well-oiled promotion.

A carefully-worded publicity release notes that "inspiration for the development of this program began with" Reuben Frank, C-P's triple-threat leader (Chairman, President and CEO), and that it had been tried in Detroit with "great success" and will now also be run in Atlanta.

(EPIEGRAM has problems with business involvement when it has a strong element of product promotion. Businesses do have to make a profit...more should these days; young African-Americans can presumably benefit from role models; the UNCF can well use a fast 100 grand and who can knock helping five deserving youngsters go to college? But is this really helping education or providing role models for ghetto kids? Linking soap sales to good deeds may seem a smart thing to do in the boardroom, but it looks like just another rip-off to a kid in the street. EPIEGRAM thinks Mr. Frank should have another "inspiration for the development" of a program.) ***E.L.F.***

M.S. DEGREE IN INFORMATION NETWORKING

Editor's note: *When the Bell System was split up on 1/1/84, the so-called Baby Bells, separated from Mother Bell (AT&T), set up a surrogate mother for research called Bellcore. While not well known, Bellcore is at work bringing about its own kind of systemic thinking to education.*

Something new in academe: a Master of Science degree in Information Networking. It's being offered by Carnegie Mellon University's Information Networking Institute, a joint venture with Bellcore. The faculty represents the schools and departments of Computer Science, Electrical and Computer Engineering, Industrial Management, and Engineering and Public Policy.

The objective is to provide the student with knowledge and skills critical to the innovation and implementation of future information networks. It integrates courses from four academic areas: telecommunications, computer hardware and software, business, and policy studies, an eclectic combination not traditionally offered in one graduate program. Prof. Marvin Sirbu chairs the executive committee. The school offers a 4-month Advanced Technology Innovation program for qualified professionals and a 14-month program leading to a Master of Science degree in Information Networking.

Bellcore has its own campus, the Training and Education Center (TEC) in Lisle, Illinois, some 30 miles west of Chicago. It offers more than 400 courses ranging from basic telecommunications skills to executive management. Since its founding, TEC has trained more than 500,000 students.

Bellcore is also sponsoring a forum, open to both academics and training consultants (March 13 & 14). For more information, call Donna Liesse at Bellcore TEC, 709 960-6400.

LUCKY 13 NEEDS NINE MORE SPONSORS

The International Science and Engineering Fair (ISEF), a prestigious international academic event, will be held in Nashville, Tennessee, May 10-16. Seven hundred and fifty students from around the world, all of whom have won at science fairs in their own countries, will compete in 13 categories.

To date, four corporations have agreed to be sponsors of the Grand Awards: Intel Corp. (Engineering); Macdonnell Douglas (Computer Science); Northern Telecom (Mathematics); Phillips Petroleum (Environmental Science). Nine other categories are still open for corporate sponsorship: Behavioral & Social Sciences, Biochemistry, Botany, Chemistry, Earth & Space Science, Medicine & Health, Microbiology, Physics, and Zoology.

Currently, Grand Award winners receive $500, $350, $200, or $. 0, for first to fourth place awards. W... increased corporate sponsorship, the awards will be raised to $5,000, $2,500, $1,000, and $500.

GMU

General Motors announced a unique undergraduate degree program for its technicians, an extension of its award-winning, on-site Technical Education Program. Under the new program, GM employees can earn an Associate of Applied Science Degree in Electromechanical Technology in two years, then transfer into the Bachelor's Degree in Engineering Technology program at the Rochester (NY) Institute of Technology without any loss ofcredit.

The Technical Education Program was started at GM's Advanced Engineering Staff in 1984 and now offers course work from more than 50 colleges and universities, including degree programs from five universities. Currently, some 5,000 employees are enrolled in classes, half in degree programs. Most courses are taught on-site, where GM students work six and a half hours and attend classes for three hours, half on their own time. GM pays for tuition and books.

For more information, contact Dave Sloan of GM at 313 986-5721.

106 GRANTS FROM HP TO HS

One hundred six high schools in the U.S. and Canada have been chosen to receive a Hewlett-Packard classroom-calculator program grant. The recipients will receive teacher-training and curriculum materials along with graphing calculators and related equipment. The hardware value of each grant is more than $8,000.

HP's classroom-calculator program was developed in cooperation with the Oregon State University Calculus Curriculum Project, one of several initiatives in higher-mathematics curriculum innovation and development funded by the National Science Foundation.

During the 1990-01 school year, HP gave a similar grant package to 40 schools in communities in which the company has manufacturing facilities.

For information on when and where to submit proposals, contact Lucy Honig, Hewlett-Packard, Corvallis, Oregon, at 503 750-2038.

THE STATES CONSORTIUM FOR IMPROVING SOFTWARE SELECTION
SCISS
TESS
THE EDUCATIONAL SOFTWARE SELECTOR
UPDATE

Bob Haven, Software Maven, Cites Growth, Suggests New Directions

"The volume of new software products available to educators is intimidating," says Robert Haven, director of Data Crafts, Inc., a Maine-based company which works in association with EPIE Institute to manage EPIE's TESS software database. He notes that with new programs being produced at a rate of more than 150 per month, the total number of products entered in The Educational Software Selector is rapidly approaching 11,000.

For more than a decade, EPIE Institute has been monitoring the educational software marketplace and, Haven notes, some trends have remained surprisingly constant. Math, for example, continues to be the most popular subject area, with English/reading/language arts running a close second. There has been an upsurge, however, in programs designed to address current issues such as AIDS education, and a definite swing toward multimedia programs.

Working daily to provide educators with information about all 11,000 software programs—TESS is unequaled in its coverage—gives Bob Haven a unique overview of educational software. Although some older programs have been redesigned to take advantage of the new graphics technology and interface improvements, Mr. Haven is concerned that the industry is not producing more programs that encourage investigation and exploration on the part of the student.

"I still don't see a lot of new software that I would call 'open-ended," says Mr. Haven, noting that drill-and-practice programs are highly structured, providing no tools for anything beyond mastery of the material; the user is expected only to react. "My advice to software publishers," he says, "is to create more new programs that give students greater latitude in their responses, software that encourages them to ask questions, to try hunches. Developers should take greater advantage of the flexibility and scope of electronic media."

Editor's note: We asked Bob Haven to give us answers to some of the most frequently asked questions about TESS:

Q: How do the various computers compare when it comes to the availability and choice of hardware?

A: Apple has long dominated the educational software

continued on page 14

The Ayes of Texas

Excitement is spreading deep in the heart of Texas educators at the news of the imminent arrival of the TESS database. Phase I started in February when the database and training materials were sent to the twenty Education Service Centers, which provide the training and support to the educators in the regions.

Phase II began in March with copies of the database and order forms sent to the 1,063 school districts. The superintendent in each district will disseminate the information to all schools in the district – a total of 6,322 campuses.

To encourage the widespread use of TESS, Longhorn educators are urged to copy and share the database with other educators in the state. In addition, TESS will soon be available as an on-line searchable database on the Texas Education Network (TENET).

TESS came to Texas because of the Texas State Board of Education's Advisory Committee, which investigated the various software and evaluation tools available. The Committee highly recommended that Texas join the States Consortium for Improving Software Selection (SCISS), since no other resource approached TESS in scope or economy.

The Service Center in El Paso is handling the distribution of the computer version of TESS, while the Center in Houston is distributing the print version, *The Latest and Best of TESS*.

Anyone wishing more information or advice and counsel on how to get TESS established should call the TESS contact at the state department of education, Karen Kahan, Texas Education Agency, at 512 463-9401, or e-mail at kkahan@tenet.edu. ❑

TESS Making it in New York

Both TESS and *The Latest and Best of TESS* have been distributed to the Regional Instructional Centers of the BOCES throughout New York State, according to Alan Walker, Coordinator of Instructional Services at BOCES. Both the Macintosh and the PC versions are in use, and distribution has begun to schools. The directors of the Instruction Committee will share feedback from their local schools at their March meeting.

To date, the *Latest and Best* version has been popular because, according to Walker, many schools don't have the equipment capacity for the complete version. ❑

TECH NOTES

Three for a Rainy Day

Children jaded by Disney and Nintendo will still perk up at the wonders to be found in three museums dedicated to technology and the future.

In **San Jose**, the heartland of Silicon Valley, the emphasis at "The Tech," as might be expected, is on semi-conductors, biotechnology, space, and robotics, the later being the most popular. A household robot for paralyzed people cooks and serves and answers the phone. Vanna the Alphabot spells out words by positioning wooden blocks; another will sketch your portrait. Lots of hands-on at this museum; visitors can try out software and information services and even design a bicycle.

> The Tech Museum of Innovation, 145 West San Carlos Street, San Jose, California, across from the new San Jose Convention Center. Open 10 to 5, Tuesday through Sunday, 9 to 5 for school groups. $6 for adults, $4 for students; members and under 5 free. 408 279-7150.

In **Boston**, the computer is the star with a giant two-story working model of a PC, 50 times larger than life, with a 25-foot working keyboard and a floppy disk the size of an adult. Visitors can roll a 6 x 9-foot trackball to move a screen pointer to have the computer plot the shortest route between two cities.

Most of the exhibits are interactive – computers that play chess, that tell your height, that will talk with you. Also, early computers, an introduction to artificial intelligence and robots, and a computer-graphics gallery with interactive exhibits.

> The Computer Museum, 300 Congress Street, Boston, Massachusetts. 617 416-2800. Open 10 to 5, Tuesday through Sunday, also Monday during school vacations, until June 30, then 7 days a week. Admission $6; $5 for students and over 65. Half price on Saturdays until noon.

In **Washington**, Tech 2000, a reminder that all information can now be digitized and that the computer doesn't really care whether something started out as print, graphics, or sound, it all ends up stored as bytes. For children, more than a dozen interactive multimedia displays, such as one developed by IBM to teach deaf children how to talk; others teach chemistry, history, the danger of AIDS. Also, an early application of "virtual reality," examples of how the Air Force uses multimedia to train ground crews how to put out a fire on an F-15.

> Tech 2000, 800 K Street, N.W., Washington, D.C., 20001. Tuesdays through Sundays, 11 TO 5. $5 General Admission, $4 for Students, $3 for Senior Citizens and under 12. 202 842-0500. ❑

At Carnegie-Mellon Library, Fingers Do the Walking

The library at Carnegie-Mellon University will be as close as a computer because of a new electronic library system based on distributive computing.

Pioneered by DEC, the system, dubbed "Project Mercury," enables students and faculty to search and retrieve electronic documents stored in the university library from almost any type of computer, anywhere on the campus.

Recognizing there is no way to anticipate how quickly people will adapt to an electronic library system, the university has begun building the library by focusing on publications dealing with artificial intelligence and computer science. However, the technology allows for almost unlimited growth, and by using standard formats can link with libraries anywhere in the world.

Funding for Project Mercury came from the Pew Charitable Trusts and Digital with further support by the On Line Computer Library Center, Apple Computer, The American Association for Artificial Intelligence and Bell Atlantic Corporation.

The Wide Wide World of WICAT

Multimedia referencing is the newest K-12 concept from WICAT, designed to teach students how to find and use information in all media.

In standalone reference works, teachers and students work out of context; Multimedia Reference Learning integrates information courseware from WICAT with World Book reference materials as well as Wicat's integrated Wordbench word processor, an on-line calculator, and a notepad.

Initial products include Writing Plus (K-8) and Science II Plus (5-9), which use World Book's CD-ROM as a reference resource. More will be available by 1993.

Floppy + Optical = Floptical

Floptical disk drive technology, developed to provide large storage capacity for portables and laptops, combines, as the name implies, the best of two worlds. It brings together the patented optical servo positioning tracks with magnetic recording technology. A single Floptical diskette has the storage capacity of fourteen 1.44 MB diskettes.

Helping Hand

Designers, developers, and marketers of multimedia software programs are getting a helping hand from IBM with its new Ultimedia Developers Program. For an annual fee of $4,000 ($2,000 before May 31st) participants will get on-line technical support as well as a "Try & Buy" program, a plan whereby participants have the opportunity to use a set of IBM systems for 120 days, then either return the hardware or buy it at a whopping 50% discount. Participants can buy IBM software and enroll in IBM technical conferences at a reduced rate. *continued....*

Tech Notes continued....

Virtual Reality, Good and Cheap

"If you can use a camera," says the Virtual Reality Laboratories brochure, "you can quickly learn to use Vistapro." List priced at $129.95, Vistapro creates images from raw numerical data right on your PC screen.

Vistapro lets one tour Mt. St. Helens before and after the eruption, set up a camera inside the Olympus Mons of Mars and look around, create "stunning flythrough" animations. Another program, Distant Suns, lets the user recreate an accurate night sky for any time from 4173 B.C. to 10000 A.D.

Arthur C. Clarke, author of *2001: A Space Odyssey*, is quoted in a letter to film producer Stanley Kubrick, "If you get it (Vistapro) into your computer, you'll never do any more work...produces images of almost photographic quality. ... I can modify the landscapes by putting in rivers, lakes, stars, trees, haze, vegetation in almost every conceivable way – so I'm busy 'greening' Mars."

Contact: American Software Distributors, Micro-PACE and Megatronics, or Virtual Reality Laboratories, 2341 Ganador Court, San Louis Obispo, California 93401. Phone or fax: 805 545-8515.

Requires 640K RAM; hard disk with at least 3 MB free; VGA or Super VGA graphics card; VESA driver; Microsoft-compatible mouse and driver.

Pen Mightier than the Board

Industry prophets predict industry profits from pen-based portables will proliferate because the pen-based portables will be more "mainstream" than keyboard-based desktops.

While pen-based programs have been clunky and narrow in function, a new spreadsheet called At Hand ($295) looks very sophisticated and easy to operate, with superior handwriting recognition that can make sense of both upper- and lower-case letters and scrawled numbers.

At Hand was developed by Dan Bricklin, co-developer of the first popular spreadsheet, Visicalc, which did much to spur sales of the Apple II.

Blessed Event

If you want to see the future, check out the first optical-based interactive magazine, which will debut at the Microsoft International Conference on Multimedia and CD-ROM in San Francisco beginning on March 10th. The initial pressing of 10,000 copies of CD-I World will be distributed as inserts within a guide magazine.

The single copy price is $19.92; a subscription is $55.75. Get there early; sounds like a collector's item for sure.

MacLanguage

Transparent Language, which has gotten more than its share of huzzahs for its innovative approach to teaching a foreign language, has just added a Macintosh version ($115) to its well-received DOS version ($95). Reachable at 603 465-2230, Transparent is one New Hampshire business which is booming. P. O. Box 575, Hollis, New Hampshire 03049.

Apple Use

As Apple IIs get pushed aside by new and more sophisticated technology, make sure they are kept working. For example:

- Lend Apples to students to take home for short periods of time, with appropriate software.
- Make Apples available for students to learn keyboarding.
- Put Apples in elementary classrooms for student use.
- Make them available to teachers who are beginning to experiment.

160MB for Price of 80MB

Indicative of a new attitude toward education, IBM has just announced it is doubling the hard drive capacity of its first multimedia machine, the PS/2 Ultimedia M57 SLC, from 80 MB to 160 MB at no increase in price.

It is still a hefty $5,995 but the components are prepackaged, fully integrated, ready to use, and expandable. The machines will initially ship with OS/2 2.0 LAP (Limited Availability Program Code). Customers will be shipped a full OS/2 2.0 CD-ROM with documentation at no charge when it becomes available.

Ask Not for Whom Bell Tolls

Pacific Bell is offering a new voice-mail service designed to get teachers and parents talking together about education.

Called "Homework Hotline," it gives parents 24-hour access to daily reports on homework assignments, school activities, PTA information, and lunch menus.

Each teacher has a private voice-mail box for recorded messages about the day's curriculum and assignments. When parents call, they hear what the child studied that day and what homework was assigned. Thus, the parents can supervise study more readily and help (or otherwise) if needed. Parents can also leave confidential messages for the teacher, and report a child's illness or special needs.

Teachers report it is far more effective than sending notes home and it makes the teacher much more productive since a teacher can meet electronically with half of the parents each day. Without Homework Hotline, teachers saw only two or three parents a week. For information on Homework Hotline, call 800 540-8020. ❑

The Latest English and Language Arts Programs from the TESS Database

THE BANK STREET PREWRITER
Scholastic
English and Language Arts: Basic Skills, Composition and Writing
Grades 5-12
Steps students through first stage of writing process. Brainstorming activities help students explore and focus ideas for writing projects. Prompted writing activities encourage students to flesh out their ideas for specific styles and types of writing such as stories, essays, and poems. Can transfer outlines to other word processors to write assignments. Not copy protected.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $59.95.

BIG BOOK MAKER: TALL TALES
Queue
English and Language Arts: Basic Skills, Composition and Writing
Grades 3-6
Uses art based on traditional tall tales to motivate creative writing skills. Students can select one of the backgrounds and add characters, props, or text to design their story pages. Teachers can create blackline masters, activity sheets, workbooks, etc.
Apple II/II+/IIe/IIc, $49.95.

BREAKTHROUGH TO LANGUAGE VOLUME I
Creative Learning
Reading: Vocabulary, English and Language Arts, English As Second Language, Basic Skills, Spelling
Grades K-2
Allows the students to trace alphabet letters, pictures, and words while they repeat the phonic sound or key vocabulary word. Can use authoring feature to create an unlimited number of tracing, writing, and spelling lessons. Requires ECHO or Cricket voice synthesizers; TouchWindow; and Electronic Memory Board.
Apple II+/IIe/IIc/IIgs, $159.95.

CHARLIE AND THE CHOCOLATE FACTORY
Sunburst Communications
Comprehensive: Generalized Tool Programs, Publishing and Printing Tools, English and Language Arts, Basic Skills, Composition and Writing
Grades 3-4
Allows teachers to combine oral reading of children's literature with creative writing. Includes lessons for prewriting, writing at the computer, revising, proofreading, and publishing. Not copy protected.
Apple II+/IIe/IIc and compatibles, $59.

CHILDREN'S WRITING AND PUBLISHING CENTER
The Learning Company
Comprehensive: Generalized Tool Programs, Publishing and Printing Tools, Word Processors
Grades 2-9
A powerful productivity tool that helps students build written communication skills and produce a variety of finished documents. Features word processing, picture selection, and page-design capabilities. Can be readily integrated into many curriculum areas with its broad range of applications. Network version available.
Apple II+/IIe/IIc/IIgs, $89.95; IBM PC and compatibles, $99.95.

CLASSROOM NEWS INTERNATIONAL
Educational Activities
Comprehensive: Generalized Tool Programs, Publishing and Printing Tools, Word Processors
Grades 5-12
An easy-to-use word processor/classroom publishing program made expressly for school use. Keeps records. Copy protected. Network version available.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $65.

CLEO, THE MAGIC DRAGON
Focus Media
English and Language Arts: Basic Skills, Composition and Writing, Reading, Comprehension Skills
Grades 2-3
Builds on children's reading and writing skills, comprehension, and vocabulary, as they uncover the story of the mysterious purple rock, and Cleo, the Magic Dragon. After developing new vocabulary, students then use the built-in word processor to write stories about Cleo. Includes teacher management.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $55.

DINOSAUR DAYS PLUS
Queue
English and Language Arts: Basic Skills, Composition and Writing
Grades 2-8
A talking graphics database and writing program that allows students to write stories about the dinosaurs they create. Lab packs are available. Requires ECHO II or Cricket.
Apple II+/IIe/IIc/IIgs, $49.95.

DISCOVERY READING FOR SCIENCE
Educational Activities
Reading: Reading in Content Areas, Science
Grades 4-8
Combines science passages and specific reading-comprehension skills, including context, syntactic, and prediction clues; signal words; and pronoun referents. Keeps records. Five programs on 5 diskettes.
Apple II+/IIe/IIc/IIgs, TRS-80 Mod III/IV, $159. Each diskette has 4 stories on one reading level at $39.95.

EXPLORE-A-FOLKTALE: PECOS BILL AND SLUE FOOT SUE
William K. Bradford Publishing Company
Reading: Comprehension Skills, English and Language Arts, Basic Skills, Composition and Writing
Grades 3-5
Presents a variety of activities to help direct student attention to the special elements of the stories and provides tools to help them create their own stories. Provides a process-writing environment – a collection of resources to help students brainstorm, draft, revise, and more.

Cultural-based from American Southwest. Part of the Explore-a-Folktale series. Network version available.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $75.

FIRST "R" – GRADE 1
Milliken Publishing Company
Reading: Reading Readiness
Grade 1
Word-recognition program with strong emphasis on comprehension. Students learn words through the standard methods of phonetics and use them immediately in sentences and stories. Covers individual vowels, double vowels, and ending blends. Part of the First "R" series. 12 diskettes, 2 workbooks, 1 teaching guide.
Apple II+/IIe/IIc/IIgs, $285.

FIRST-START MICRO READING LABS
Troll Associates
Reading: Reading Readiness
Grades K-2
Contains colorful 32-page hardcover book, matching read-along audio cassette, micro software program disk with learning activities that are keyed to the book, and a user's guide. Average lesson 10 minutes. No recordkeeping. Copy protected. Network version available.
Apple II+/IIe/IIc/IIgs, $39.95

FIRST STEPS TO COMPREHENSION
Educational Publishing Concepts
Reading: Comprehension Skills
Grades 1-3
Provides a setting where students can practice and improve their comprehension skills while gaining experience with specific vocabulary. Coordinated set of exercises using Houghton Mifflin word list. Keeps records. Copy protected. Network version available. Five diskettes, student handbook, teaching guide, reference manual.
Apple II+/IIe/IIc/IIgs, $159.90.

GRAMMAR GAZETTE
Minnesota Educational Computing Corporation
English and Language Arts: Basic Skills, Grammar and Usage
Grades 5-6
Contains four programs: Mad News (for reporters), Weird News (for editors), Pig Tales (for staff writers), and Cryptogrammar. Designed to develop students' grammar skills. Focuses on recognizing parts of speech, editing usage problems, and expanding sentences with prepositional phrases. A decoding game helps students see patterns in words.
Apple II+/IIe/IIc/IIgs, $59.

IBM READING FOR MEANING LEVEL II
IBM
Reading: Comprehension Skills
Grades 3-4
Leads students through a variety of instructions designed to make them think about what they read. Helps teach information classification, develop contextual-analysis skills, and increase comprehension of word connotations. Part of the Reading for Meaning series.
IBM PC and compatibles, IBM PCjr, $137.

LEA 1 – FUNCTIONAL LITERACY
Educational Activities
Reading: Comprehension Skills, English and Language Arts, Basic Skills, Composition and Writing
Grades 5-10
Uses the students' own experiences as the basics of a reading and writing improvement program. Directs the computer to develop lessons from the student's text input, compiles individual student word banks, and provides follow-up activities. Five programs, five diskettes, teaching guide.
Apple II+/IIe/IIc/IIgs, TRS-80 Mod III/IV, IBM PC/PC-XT/PCjr, Tandy 1000/3000, $295.

MAGIC SLATE II
Sunburst Communications
English and Language Arts: Basic Skills, Composition and Writing
Grades 2-College
A tool for teaching writing, including cutting and pasting. Teachers can create fill-in-the-blank files, design lessons with on-screen directions, and place comments in student files, saving them from having to without write on their papers.
Apple II+/IIe/IIc/IIgs.

MICKEY'S MAGIC READER
Sunburst Communications
Reading: Reading Readiness
Grades 1-2
Students read a sentence composed of words and a key picture for which students must choose the correct word. Then they decide what happens next in the story. Copy protected. Network version not available.
Apple II+/IIe/IIc and compatibles, $65.

MORE MYTHS, MAGIC AND MONSTERS
Word Associates
Reading: Reading in Content Areas, Reading, Comprehension Skills
Grades 4-8
Emphasis on Greek myths, develops the skills of recall, sequencing, defining the main idea, identifying the speaker, figurative language, drawing conclusions, and recognizing mood. The tutorial mode gives explanations and help for every answer choice, correct and incorrect. Average lesson 20 minutes. Keeps records. Not copy protected. Network version available.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles.

MYSPELLERY
William K. Bradford Publishing Company
English and Language Arts: Basic Skills, Spelling
Grades 4-6
A spelling and language game that encourages discussion about how our language works and fosters investigation of its possibilities. Students are presented with misspelled words or phrases to be properly spelled. Provides clues based on common patterns in English-language spelling. Teachers can customize their own Myspelleries. Network version available.
Apple II+/IIe/IIc/IIgs, $35.

NEWSPAPER LITERACY
Educational Activities
Reading: Reading In Content Areas
Grades 3-4
Familiarizes students with all parts of a newspaper and how they are organized. Students are introduced to newspapers through a tutorial lesson which describes the various parts of the newspaper, how to locate them, and what information they contain. Average lesson 20 minutes. Keeps records. Copy protected. Network version available.
Apple II+/IIe/IIc and compatibles, $119.

ONE OF A KIND
Sunburst Communications
Reading: Vocabulary
Grades 3-College
Designed to expand students' vocabularies and to enhance creativity. Presented with three different categories, students are asked to enter four words. The more original and unique the answer, the greater the score. Copy protected.
Apple II+/IIe/IIc and compatibles, $75.

PROOF IT! FOR MAGIC SLATE II
Sunburst Communications
English and Language Arts: Basic Skills, Spelling, Grammar and Usage
Grades 5-7
Thirty lessons on topics from science to sports provide students with practice in grammar and proofreading skills. Not copy protected.
Apple II+/IIe/IIc and compatibles, $65

PUNCTUATION PUT ON (9-12)
Sunburst Communications
English and Language Arts: Basic Skills, Punctuation
Grades 9-12
Students are placed in the position of a writer making judgements about how punctuation marks enhance dialogue, narrative, poetry, and other styles of writing. Students are challenged to use exclamation and quotation marks, colons, semicolons, apostrophes, commas, periods, and parentheses.
Apple II+/IIe/IIc/IIgs, $75.

READER RABBIT 2
The Learning Company
Reading: Reading Readiness, Vocabulary, English and Language Arts, Basic Skills, Spelling
Grades 1-2
Provides children with a playful way to develop important word recognition, spelling, and vocabulary skills-the essential building blocks in learning to read. With over 1,000 words to work with and four levels of play per game, children learn skills one at a time, at their own pace, and use them in subsequent games and levels to acquire new skills.
IBM PC and compatibles, $59.95

READING FOR INFORMATION LEVEL II
IBM
Reading: Comprehension Skills
Grades 3-4
Helps students improve their reading comprehension skills, draw inferences, follow directions, interpret information on charts/graphs, locate facts, and select main ideas. Introduces persuasive writing and teaches students to evaluate logical structure of an argument. Keeps records. Copy protected. Network version available.
IBM PC and compatibles, IBM PCjr, $95.

READING FOR MEANING LEVEL I
IBM
Reading: Comprehension Skills
Grade 2
Leads students through a variety of instructions designed to make them think about what they read. Helps teach information classification, develop contextual-analysis skills, and increase comprehension of word connotations.
IBM PC and compatibles, IBM PCjr, $114.

ROV-A-BOT
Educational Activities
English and Language Arts: Basic Skills, Grammar and Usage, Composition and Writing, Logic and Problem Solving
Grades 2-4
Students are in control when they create, activate, and transform ROV-A-BOTS. Develops critical thinking skills, understanding of the meaning of verbs, and how to create simple sentences.
Apple II+/IIe/IIc/IIgs, $59.95.

SCHOLASTIC WRITING WORKS
Scholastic
English and Language Arts: Basic Skills, Composition and Writing, Computers, Computer Literacy, Applications
Grades 7-12
Helps students sharpen their expository and creative writing abilities as they learn the word processing functions of AppleWorks. Activities cover all aspects of the writing process as well as sequencing, using metaphors and similes, and more. Network version available.
Apple II+/IIe/IIc/IIgs, $59.95.

SCHOOL SPELLER FOR MAGIC SLATE 2
Sunburst Communications
English and Language Arts: Basic Skills, Spelling
Grades 6-10
Lets students print their files with misspelled words highlighted and then get a list of those words. They can also get a record of their spelling errors, with a printout of the number of times they misspelled a word, and how they corrected it. Enables students to view and edit their custom dictionaries.
Apple II+/IIe/IIc and compatibles, $75.

STEP RIGHT UP! CAPITALIZATION AND PUNCTUATION
Focus Media
English and Language Arts: Basic Skills, Composition and Writing
Grades 6-10
Provides students with a guided approach to writing that integrates instruction, practice skills, and creative writing activities with an easy-to-use word processor. Includes exercises related to proper nouns; the use of commas in a series,or to clarify meaning; and the correct use of quotation marks.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $55.

STEP RIGHT UP! SENTENCES AND PARAGRAPHS
Focus Media
English and Language Arts: Basic Skills, Composition and Writing
Grades 6-10
Provides students with a guided approach to writing that integrates instruction, practice skills, and creative writing activities with an easy-to-use word processor. Covers topic sentences, sentence sequencing, and fixing run-on sentences and fragments.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $55.

STEP RIGHT UP! WRITING TO EXPLAIN
Focus Media
English and Language Arts: Basic Skills, Composition and Writing
Grades 6-10
Provides students with a guided approach to writing that integrates instruction, practice skills, and creative writing activities with an easy-to-use word processor. Helps students practice how to choose the best vocabulary to convey meaning, use supporting details effectively, compare and contrast, and write persuasively.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $55.

STEP RIGHT UP! WRITING FOR FUN
Focus Media
English and Language Arts, Basic Skills, Composition and Writing
Grades 6-10
Provides students with a guided approach to writing that integrates instruction, practice skills, and creative writing activities with an easy-to-use word processor. Includes practice with Haiku and skits, as well as news reporting and story writing.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $55.

STEP RIGHT UP! WRITING LETTERS
Focus Media
English and Language Arts, Basic Skills, Composition and Writing
Grades 6-10
Provides students with a guided approach to writing that integrates instruction, practice skills, and creative writing activities with an easy-to-use word processor. Helps students develop the correct form for formal and informal letters, thank-you notes, and invitations and replies.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $55.

STORYBOOK WEAVER: WORLD OF MAKE-BELIEVE
Minnesota Educational Computing Corporation
English and Language Arts: Basic Skills, Composition and Writing
Grades K-6
Engages students in the writing process. Selecting from the variety of available scenes and objects, students write and illustrate a story or create a storybook. This product draws from the elements of folk literature to allow students to explore the folklore of various cultures.
Apple II+/IIe/IIc/IIgs, $59.

STORYBOOK WEAVER: WORLD OF ADVENTURE
Minnesota Educational Computing Corporation
English and Language Arts: Basic Skills, Composition and Writing
Grades K-6
Designed to involve students in writing process. Choosing from various scenes and objects, students use their creativity to develop and illustrate a story. With a focus on adventure, this product allows students to take a step beyond their everyday experiences and explore their world.
Apple II+/IIe/IIc/IIgs, $59.

SUPER STORY TREE
Scholastic
English and Language Arts: Basic Skills, Composition and Writing
Grades 4-8
Students write branching, interactive stories page by page with graphics, special effects, and sound. A story branches out from one beginning to many possible endings using the page-linking features. Suitable for integrating writing across the curriculum. Not copy protected. Network version available.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $79.95.

THE VELVETEEN RABBIT
Sunburst Communications
English and Language Arts: Basic Skills, Composition and Writing
Grades 1-2
Links the reading of literature by the teacher with creative writing lessons. The lessons include poetry, letters, sentences, stories, journals, and much more. For use with Magic Slate II. Not copy protected.
Apple II+/IIe/IIc and compatibles, $59.

A WRINKLE IN TIME
Sunburst Communications
Reading: Comprehension Skills, Vocabulary
Grades 4-8
This adventure story, presented in an interactive format, encourages students to place appropriate vocabulary words in sentences and remember main ideas and specific details in the proper sequence.
Apple II+/IIe/IIc/IIgs, Commodore 64/128, $65.

WRITE A STORY!
Sunburst Communications
English and Language Arts: Basic Skills, Composition and Writing
Grades 5-7
Given a "scene-setting" opening paragraph, students will develop the plot, create their own characters and write their own dialogue, using the 40-column level of Magic Slate or Magic Slate II, also by Sunburst Communications. Students are directed to work in teams and to revise, edit, and proofread. Copy protected.
Apple II+/IIe/IIc and compatibles $59.

WRITING BASICS
William K. Bradford Publishing Company
English and Language Arts: Basic Skills, Composition and Writing, Punctuation
Grades 5-10
Integrates onscreen instruction, skills practice, and creative writing activities into an easy-to-use word processor to teach capitalization and punctuation, writing for fun, writing letters, and writing to explain. Network version available.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $60.

WRITING LAB
Scholastic
English and Language Arts: Basic Skills, Composition and Writing
Grades 7-9
30 assignments help students sharpen expository and creative writing skills. Activities cover all stages of the writing process, sequencing, using metaphors and similes, and more. Requires the Bank Street Writer III by Scholastic. Not copy protected.
Apple II+/IIe/IIc/IIgs, $39.95.

WRITING PROCESS WORKSHOP
Educational Activities
English and Language Arts, Basic Skills, Composition and Writing
Grades 4-6
A step-by-step guide through the entire writing process. FrEdWriter word processor is included in this package. Programs include: Persuasive Writing, Report of Information/Observation, Autobiographical Incident, Evaluation, Analysis: Speculation About Effects, Firsthand Biography-Sketch, Eyewitness Memoir, and story - each $69.95. Eight diskettes.
Apple II+/IIe/IIgs, $395.

WRITING SKILLS BANK
Scholastic
English and Language Arts, Basic Skills, Composition and Writing
Grades 4-6
More than 40 full lessons and 150 writing activities cover topics such as writing letters, descriptions, and stories; writing complete sentences; correcting common errors of grammar and style; and more. Requires The Bank Street Writer III by Scholastic.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $39.95.

BEST COPY AVAILABLE

Bob Haven from Page 7

Over the year, almost 8,000 programs have been designed for the Apple II family of computers. Another 700 programs have been produced more recently for the more powerful Macintosh.

Q: Will The Educational Software Selector tell me how many programs there are for each computer?

A: Absolutely! And for each subject area, and grade level and price – everything you need to know.

Q: How do you search for software on TESS?

A: When drawing upon the entire database of 11,000 entries, you must first define a set of *parameters*, which helps limit the search and enable you to zero in quickly on what you need. For example, you start with the kind of computer; then you will want a specific subject area and grade level and so on. The search capabilities on the TESS database also include the software publisher, the address and telephone, a list of all products produced by that supplier, its warranty and preview policies – everything you need to know to make an informed decision.

Q: If TESS has to search through all 11,000 programs, it must take time...how long does an average search take?

A: Search times vary, depending on the parameters you have specified. The more detailed your description, the less time it takes to search. I'll use the stopwatch for a sample search. Computer family, Macintosh. Grade level, senior high, grades 10-12. Maximum price, $100. Subject area, ecology. Focus, pollutants. In this search, TESS came up with four programs which met all the above criteria. The search took 25 seconds.

Q: With information on 11,000 programs, TESS must obviously cover software for major curriculum areas such as math, English/language arts, science, and social studies – but what other areas of the curriculum does TESS cover?

A: It covers whatever software is available...it's all in TESS. Within each main subject area is a series of major sub-areas which may also be broken down into another set of sub-areas. For instance, in science, you will find 17 major sub-areas such as biology, chemistry, physics, earth science, and so on. Under biology, you will find heredity, reproduction, cells, and tissues, etc. Under chemistry, you will find acid-base chemistry, reaction-equilibrium, solutions, etc. Tell TESS what you want, and if it is available, TESS will find it for you.

Q: Even unusual subjects?

A: If someone has written a program, TESS will have it. There are programs on aviation education, driver's ed, consumerism, library science, medicine, cinematography, zoology – you get the idea. And TESS also offers a wide array of administrative and tool programs.

Q: I work with preschoolers. Is there much choice of programs I can use with youngsters?

A: There are 318 educational software programs described on the TESS database that are recommended by their suppliers for use with preschoolers. Here is what's available for other grade levels: 1,469 for kindergarten; 3,107 for grades one to three; 4,795 for grades four to six; 6,574 for grades seven to nine; 6,095 for grades ten to twelve; 3,623 for college; 676 for post-grad.

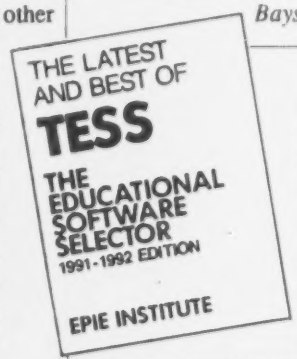
Q: That adds up to more than 11,000, doesn't it?

A: Of course, but some programs, especially the newer ones, have different levels of difficulty. Level 1 may be for grades one to three, level 2 for grades two to four, level 3 for grades three to five. There's a lot of flexibility built in.

Q: One final question: how hard is to learn how to search TESS? Do you have to be a "techie?"

A: Not at all. The states that belong to the States Consortium for Improving Software Selection find that a two-hour session is more than enough for the average teacher, even those who have never touched a computer before.

Editor's Note: While the complete electronic version of TESS is available statewide only in Consortium States, a number of different memberships are available. Standalone users (single building, no copying) can join as "Previewing Members;" smaller education units (e.g., a city) as "Participating Members;" foundations as "Supporting Members;" and corporations as "Associate Members." Call or write Pat Lutzky at 516 728-9100, EPIE Institute, 103-3 West Montauk Highway, Hampton Bays, New York 11946.



The 1991-92 edition of *The Latest and Best of TESS* describes in detail more than 2,500 software products, including both highly-rated "classics" and those most recently added to the TESS database.

EPIE Institute editors have culled from the complete electronic database those programs which have had a large number of positive evaluations by respected review sources, as well as those programs published most recently.

The book provides program type, grade level, curricular function, intended audience, scope, user grouping, description of content and operation, components, configurations, supplier, price, and reviews. An important feature of the 400-page volume is a section on integrated learning systems based on a major in-depth study by EPIE Institute.

You can get this indispensable book for $49.95 + $5 S&H from Sterling Harbor Press, P. O. Box 28, Greenport NY 11944; Fax 516 477-0062.

Ultimate Urban Pet

Worms may not be the total solution to the garbage problem, but they do a particularly good job on kitchen scraps (8% of total garbage, so they could make a difference) and they make a super class project.

Red worms, in fact, make the ultimate classroom pet – no walking, no special foods, no trips to the veterinarian and no odor, just a continuing supply of nutrient-rich soil for flower pots and garden. And they do a particularly good job on edible kitchen scraps, even coffee grounds and egg shells, and paper, too, if it is kept damp.

Entnusiasts point out that worms, not dogs, are man's best friend, for they quietly consume the earth's surface over and over again, enriching it with their castings (undigested residue rich in nitrogen and useful bacteria). An acre of ground may contain a million worms and produce 700 pounds of castings daily.

Leave earthworms in the garden, however, for they like it cool. Red worms should be used for indoor garbage disposal, for they like temperatures in the 55-77° range and, as long as it's damp, their diligence is unfailing. Red worms cost between $10 and $20 a pound; figure that one pound of worms will dispose of the garbage created by two people.

To acquire the livestock and more information on what kind of worm ranch to buy or build, call or write: Flowerfield Enterprises, 10332 Shaver Road, Kalamazoo, Michigan 49002, 616 327-0108, for a tell-all book, *Worms Eat My Garbage*, container, and lifetime supply of worms, about $80. The Gardener's Supply Company, 128 Intervale Road, Burlington, Vermont 05401, telephone 800 444-6417, provides a bin and some 2,000 worms for $69.95.

Also, B&P, P. O. Box 398, Olathe, Colorado 81425, 303 323-6550. No shipping during freezing weather. ❑

Custodians of Privilege

"Productivity" is a word gaining new prominence in educational circles as budget restraints force new economies. One of the most obvious areas for productivity-enhancing reforms is that of the bizarre *nomenklatura* of building engineers and custodians.

Custodians run schools as little fiefdoms, demanding unsupervised budgets, overtime for work after school hours, even the right to buy automobiles with school funds; the need for engineers is a relic of the days when schools were heated by coal and had high-pressure boilers that could blow at any moment.

Expect battles here. Look for privatization to become popular as one way to break the stranglehold. ❑

The 13-Month Year

Productivity experts have long stressed that the way to increase productivity is to eliminate non-productive activity. People who complain of having no time should analyze how they spend their days. Find just one hour a day that's now being wasted and do something with it for 250 days, and there's the thirteenth month (250 divided by 8, an average workday, equals 31). ❑

Reformed Schools

Montessori enthusiasts feel that their approach can reform math and science teaching. Unlike traditional elementary education, Montessori students attend classes grouped by age rather than grade. Much of the learning is individually paced and largely self-directed, with specially-trained teachers acting as classroom facilitators.

With the emphasis on "hands-on" learning and using an array of props which give reality to abstract numbers (e.g., wooden blocks that range in size from a square inch to a square meter), it is not uncommon for students to learn about and manipulate decimals as early as age four, to add four-digit numbers at age five, and do long division by age seven.

Adherents point out that the Montessori approach reflects the recommendations of national experts that students avoid rote memorization of facts in favor of understanding concepts.

It is generally agreed that adjusting Montessori methods to the realities of public schools (space, curriculum guidelines, and testing mandates) would be difficult; and even the strongest supporters concede the cost of training teachers would be prohibitive, and that some children don't respond. ❑

Education Lotteries: a Shell Game

While lotteries are touted as a way to fund education, in most states it turns out to be illusory at best. The temptation is to put the revenue into the general fund because, officials say, education needs "a stable, reliable funding source and you can't get that from a lottery."

Nevertheless, several more states expect to try lotteries, even though the 33 states (plus the District of Columbia) which already have them (raising some $7.5 billion in 1990) have a poor record of using revenues for education.

Nobody seems to be talking about the ethics of funding government by running what are, in effect, no-win scams to rope the lowest-income citizens. ❑

Parental Involvement

The Associated Press reports that a father in Spokane, Washington, irritated that his unemployed son spent what he considered an inordinate amount of time at a computer, took his .45 handgun and pumped the offending PC full of hot lead. With no judicial precedent on whether shooting family property in the home is against the law, the police arrested the father for menacing.

EPIEGRAM opposes the shooting of computers. ❑

Views & Reviews

of works in software and other media

Broader View from Broderbund

CD-ROM is getting a big boost from Broderbund Software with its release of "Just Grandma and Me," the first in its Living Book series, programs based on popular children's books.

Living Books represent a new approach to early-learning education since they use the voice, music, and animation potential of CD-ROM to help younger children (pre-K to 2) develop reading and language skills.

While the children can listen passively as the on-screen book is read to them, they can also interact with the story by clicking on various words, characters, and objects displayed. The students can also change from one language to another without difficulty.

The Macintosh version is available now; the multimedia PC version will be released in the spring. Cost: about $50.

Poets Via VCR

Norman Rose, a man who made his living with words—he was long one of the more popular voice-overs on commercials —has created the first poetry magazine on videocassette. Called "Off The Page," each issue will feature a Pulitzer-Prize winning poet reading his/her own work. Well-known actors such as Jason Robards and Tony Randall have signed on to do Robert Frost and Ogden Nash.

The first issue is priced at $29.95 plus $0.50 S&H; future issues will be $39.95 with special deals for charter subscribers. Order from "Off The Page," P. O. Box 4003, Fairfield, New Jersey 07004, or call 201 808-9003. ❑

Just so Sacajawea is Along

"Lewis and Clark Stayed Home," is a role-playing adventure game from MECC based on the premise that the two explorers are ill and President Jefferson asks the student to lead the expedition. The goals are the same: find out what the U.S. got for its $3 million Louisiana Purchase. The student learns geography and the folkways of American Indians. $59 for the Apple II.

Also, "Bluegrass Bluff," a set of three programs that provides students with simulated experiences in an archaeological dig located in the Bluegrass area of Kentucky. Includes artifacts from the Civil War back to the culture of the Clovis mastodon hunters of 10,000 years ago. $59 for the Apple II. ❑

STATS

Is We Literature or Ain't We? A Japanese official says that one third of Americans cannot read. The nation has risen up in righteous anger. The Department of Education states emphatically that the figure is fewer than 5%. In fact, it says, if prose literacy means the ability to write a simple description of the type of job one would like to have, 96.1% of the population is literate.

But other government figures show that at the highest tested level of comprehension—the ability to synthesize the argument in a newspaper editorial, for example—only 21% of Americans age 21 to 25 are literate. A mere 20% can use a bus timetable; a pathetic 22% can figure out a restaurant tip; about 44% cannot locate information in an almanac or news story.

The statistics seem to say that only 1 in 20 young adult Americans is wholly illiterate, not one out of three as our trading partners suggest; but of the 95% who are literate, only 1 in 5 is at a functional level. That's the Japanese for you, underestimating us again!

A Total of Teachers, a Summing of Students. Of estimated 47 million students in elementary and secondary schools (including prekindergarten), 41.8 million are attending public school, 5.2 million private

Of estimated 2.8 million teachers, 2.4 million are in public school, .4 million in private.

Pupil to teacher ratios Pre-K to grade 12: 17.2 for public schools, 14.6 for private.

Men of Principal. Of the nation's 77,800 principals, 58,585 are men, 19,118 are women; 69,000 are white, 6,6900 black, 2,480 Hispanic, 434 Asian, and 821 Native American.

– National Center for Education Statistics

Movers and Fakers. No matter what people may say to the real- estate agent, good schools come last in the reasons why people move, whether owners (5.1%) or renters (3.9%). The strongest reason was for the domicile itself (O: 27.5%; R: 18.6%). Job-related considerations were more important to renters than owners (R: 18.6%; O: 8.9%). Even mere convenience scored higher than schools (O: 10.7%; R: 13.3%).

Want more? Call 202 783-3238 and ask for "Housing Characteristics of Recent Movers: 1989, series H121/91-2," or write the U.S. Government Printing Office, Washington, D.C. 20402.

– U.S. Census Bureau.

Muy Peligroso. Hispanic workers have two to three times as many industrial accidents as African-Americans and an even higher ratio compared to whites. Evidence is mounting that Hispanics with little schooling and less English do not get trained properly, and do not understand the workings of dangerous machines or the risk of handling toxic chemicals.

Worsening the problem is that aliens are often exploited, do not understand their rights, and are fearful of being deported.

The Math Connection? Almost one half of 12th graders can't perform 8th-grade math. At least 40% of math teachers did not major in math and are not certified to teach it.

Couch Potatoes Now Sprouting Tubers. Nielsen says that TV viewing in America has increased from 6.0 hours per household per day in 1971 to 6.9 in 1991.

Unprepared. Morris R. Schechtman, Management Consultant: "Department of Labor studies suggest workers 30 and under are at least 25% less productive than their counterparts of 25 years ago. Some business managers suggest that productivity for this group lags by as much as 45%." ❑

Gleanings

¶

"As President Bush tries to sell the idea of using public money to support private schools, he puts a lot of emphasis on the concept of choice. This is smart because choice is a value Americans cherish. But we should be clear on who does the choosing. Families don't choose private schools; the schools choose the students...on the basis of backgrounds or records, whether the kids will 'fit in,' and whether they should be admitted.

"[The Bush plan] also disenfranchises taxpayers, most of whom have no school-age children.... [G]iving their dollars to private schools means taxpayers have no choice about how their money is spent."

– Albert Shanker, President, American Federation of Teachers.

¶

Marc Tucker, President, National Center on Education and the Economy, who has been studying schools around the world, notes that after World War II, defeated nations—and to some extent other European nations—had to rebuild, while the U.S. did not.

"[W]hat is only now becoming apparent," says Tucker, "is that World War II led to a fundamental restructuring of the world economy." He adds that other nations restructured their societies, including their school systems, to meet the demands of growing global trade in high-technology products. For the most part, American education has been stuck in a pattern set early in the century.

¶

John Gibbons, Director, Office of Technology Assessment, on how technology has the potential to reshape education but has fallen far short of its promise:

"Schools have acquired computers rapidly...but most elements of the instructional process remain the same," says Gibbons, and he adds: "This contrasts sharply with other sectors of society where technology has changed the way business is transacted, medical problems are analyzed, and products are produced."

¶

"The real truth is that the power of technology in this society is mostly outside of school buildings because, for the most part, educators haven't wanted it inside. It's far more developed in living rooms and kids' rooms and libraries and museums."

– James Mecklenburger, President, Mecklenburger Group.

¶

Allan S. Vann, Principal, James H. Boyd Elementary School, Huntington, New York, in an article in *Education Week* discussing the gap between university-based teacher educators and school-based practitioners:

"I am continually dismayed at the large number of student teachers and recent teacher-education graduates who have little or no understanding of some of the major issues under discussion in today's schools."

¶

Philip Schlechty, President, Center for Leadership in School Reform, remarked how teachers are not consulted in school reform and questioned whether it can so succeed.

Teaching, in Schlechty's view, is regarded as if it were a "free-standing" profession, which implies individual responsibility, like medicine or law; but it is really organized like a corporation without any independence for employees. "Teachers are more like executives, so let's start giving them executive privileges. Let's treat teachers' education more like leadership development, as opposed to technical training."

¶

"Children learn about sexuality every day of their lives regardless of what parents, teachers, or other adults do or don't tell them. They learn not only by listening to adults but by observing them: the way they interact with other people; the way they show (or fail to show) affection; their reaction to TV programs and events in the community; and the attitudes they convey in their conversations with other adults."

– Pamela M. Wilson, *When Sex is the Subject: Attitudes and Answers for Young Children.*

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¶

Adam Walinsky, a lawyer writing on the Op-Ed Page of the New York *Times*, notes that U.S. armed forces may be reduced by as much as 500,000 men and women, and suggests the nation use them as teachers, health aides, and police, especially in depressed communities. Observing that the military has been a great "highway of advancement for talented men and women without regard to race or ethnic origin," Walinsky believes that the discharged veterans, about 30% of whom would be black, would be an inspiring example to the legions of lost children in the ghettos.

¶

"The American education system is geared to produce college graduates, but only 30% of jobs in this country require college degrees. The United States has not developed systems for producing world-class front-line workers.

"To insure that all American workers are educated and trained at world-class levels, businesses must sell the notion that high schools and community colleges must serve the 70% of the work force that does not graduate from college. It must also integrate secondary and advanced learning with entry-level jobs and adopt a philosophy of lifelong learning for workers...without structural changes, the U.S. will become a second-tier economy early in th 21st Century – and it won't be the American worker's fault."

– William H. Kohlberg and Foster C. Smith, *Rebuilding America's Workforce.*

¶

Michael Walters, Superintendent of Tupelo School District, Tupelo, Mississippi, discussing innovative program in which teachers are paid to travel to other schools to learn how others are bringing about systemic change:

"Past education reform has failed to a large extent because reformers have failed to recognize the power and influence of teachers."

Noting that nearly half of the teachers, as well as some principals, have spent a day or more visiting classrooms all over the U.S., he says: "Teachers are approaching us and telling us that the structure has to change; that it's illogical, that we're trying to fit the kids to the structure and instead we have to fit the structure to the kids' needs."

Electronic Learning.

AAUW Report continued from front page

• Boys do better by being bad. They intimidate girls into silence, monopolize discussions and steal an inordinate amount of teacher attention.

• Girls learn better in non-competitive, nonhierarchical ways; boys respond to a competitive environment.

How Girls Do in Math and Science:

• Though the sexes do equally well in math, girls *outperform* boys overall, e.g., in verbal skills (by grade 5 or 6), in writing, and, by most measures, reading.

• In high school, however, girls are less likely to take advanced courses; girls highly competent in math and science are less likely to pursue scientific or technological careers than are male classmates.

(Girls who see math as "something men do" score lower than girls who do not accept this.)

• A study of high school seniors found 64% of the boys who had taken physics and calculus were planning to major in science and engineering in college. Only 18.6% of girls who took the same subjects made a similar choice.

(Support from teachers evidently is of primary importance in career choice.)

• Gaps in scores on standardized tests, especially math and science, are due, the report says, to lingering bias in testing and curriculum.

• Tests tend to reflect rather than cause inequities in American education.

(Boys do better than girls on multiple-choice tests. Girls score higher on essay tests. A reading-comprehension test which focuses on baseball scores tends to favors boys, on domestic concerns, girls.)

Why Girls Drop Out:

• Almost half of girls who leave school give pregnancy as the reason.

• Despite teen-age pregnancies, girls are less likely to drop out of school, more likely to attend college.

• Family-related problems rank high for girls – 37% of female dropouts in a recent study, compared to only 5% for males.

Other Observations:

• Women and children are the most impoverished members of our society. Inadequate education perpetuates this circumstance.

• There is little change in sex-segregated enrollment patterns in vocational education: girls in office and business-training programs, boys in higher paying-jobs and trades.

• Women with five or more years of college, working full-time, make only 69 cents for every dollar earned by men with an equal number of years of education.

• While medical studies show that equal proportions of girls and boys suffer from learning disabilities, more than twice as many boys are identified by school personnel as needing—thus getting—help.

• When African-American girls do as well as white boys in schools, teachers are inclined to attribute their success to hard work while assuming the white boys are underachieving.

• The contributions of girls and women are still marginal or ignored in many textbooks.

• Incest, rape and other physical violence severely compromises the lives of girls and women across the country. This is rarely discussed in schools.

• Schools provide inadequate education on sexuality and healthy development despite national concern about pregnancy, AIDS, and the rise of STD (sexually transmitted disease).

(The U.S. has the highest rate of teenage childbearing in the Western industrialized world. Syphilis rates are now equal for boys and girls; more teenage girls than boys contract gonorrhea. While in adult population AIDS is more (nine times) prevalent in men than women, the reverse appears to be true among the young. In a District of Columbia study, the rate of HIV infection for girls was almost three times that of boys.)

• By the year 2000, two out of three entrants into the workforce will be women and minorities. More jobs will require skill in science, mathematics, and technology – subjects girls are still not being told are suitable for them.

Opinion:

Diane Ravitch, Assistant Secretary of Education: "Opportunities are opening up; girls should be urged to take advanced courses, not told they are victims." She adds that America is "against academic achievement."

Anne Bryant, Executive Director, AAUW Educational Foundation, says that by not properly educating girls "We are losing an extraordinary amount of talent."

Chester Finn, director of the Educational Excellence Network, Vanderbilt University, thinks the report shows that students have different interests and abilities and represents a diversion from the overall weakness of American education which is, he says, "Dreadful."

To get the complete report ($16.95) and various summaries, guides, and information, call 800 225-9998, extension 91. A video is also available for $24.95. ❑

> We must see the pluralism of the world, and not bind it by seeking common denominators or reducing everything to a single common equation.
> – Vaclav Havel.

NCTM Report continued from front page

a more important goal – the development of mathematical thinking.

Highlights include:

☛ Students regularly need to experience solving genuine problems.
☛ Instruction should persistently emphasize "doing" rather than "knowing."
☛ Calculators should be available to all students at all times, and every student should have access to a computer for individual and group work.
☛ For grades 9-12, *all* students should experience a core program, which should vary for college-bound students only in depth and breadth of treatment and nature of applications.

The NCTM's "Professional Standards for Teaching Mathematics," released in March 1991, is the companion document to "Curriculum and Evaluations Standards." It emphasizes the need for long-term support and adequate resources, and that teachers are the key to changing mathematics teaching and learning.

Copies of the "Standards" documents are available from NCTM for $25 each or $42.50 for both. Quantity discounts are available, as well as executive summaries and brochures. Contact: The National Council of Teachers of Mathematics, 1906 Association Drive. Reston, Virginia 22091. Telephone 800 253-7566. ❑

Director's Column from front page

Teachers who are denied even rudimentary supplies must be annoyed that someone has found a way to get almost $200 just for one skill in one subject. Something must be wrong!

To add injury to insult, "Hooked On Phonics" can't possibly do a proper job of teaching reading without a considerable amount of supplementary material and teacher time. The Winking Nun, whose enthusiastic TV testimony is fetchingly embroidered with a slight brogue, isn't telling the whole story. Not a Mortal Sin, perhaps, but I'm certain she's using "Hooked" with other reading materials and that she and her students share in a daily experience of reading real books together. That's not what the TV ads say.

And, of course, the ubiquitous commercials don't come cheaply. Something like $29 million is being spent annually to hawk the product, ridiculous when compared to the nationwide program of the Literacy Volunteers of America: with a paid staff and 50,000 volunteers, materials production and distribution come to only $3 million, of which a paltry $30,000 is available for PR and advertising. The price of their excellent materials is $3.50.

So there's plenty to be mad about with "Hooked On Phonics" and their hard sell. I joined the crowd. I've been quoted in the San Francisco *Chronicle*, the Washington *Post* and on CBS—as well as in EPIEGRAM—more or less along the lines noted above, and I still believe what I said...but....

Let's look at the other side. Let's assume that nothing changes in America until there is a total crisis. Junk bonds and S&Ls, for instance; there were plenty of warning signs but no one wanted to see them. Well, if we can't learn logically and intelligently how to improve things, then perhaps we have to do it illogically and expensively. How much has "Hooked On Phonics" cost the American public? Every 100,000 sets sold at $179.50 translates into $17,950,000, and estimates place total sales between 500,000 and 750,000. Let's be conservative and say that "Hooked" has taken in $100 million.

So perhaps the question is not whether "Hooked on Phonics" works very well but whether or not it is worth $100 million to dramatize to the public just how many Americans, many of them high school "graduates," can't read, and how desperate they are to learn. When Americans want something, they find the money..

I want to go on record – not as being in favor of "Hooked on Phonics," but in favor of the message it is sending us. At least "Hooked" is aboveboard in its chicanery, right out there for everyone to see as it pursues an honorable tradition of educational rip-off.

Look around at the more sinister waste. Textbooks which purport to align with the curriculum but don't. Hardware and software that have been sold with promises impossible to fulfill; schoolboards that obstruct education rather than promote it; administrators who have forgotten that the purpose of a school is to educate the student; teachers going through the motions while they wait to retire; games custodians play; coaches who do anything to win; parents who abdicate their responsibilities.

Teaching was once an honorable profession. Teachers ranked right up there with preachers and doctors (and sometimes lawyers) as important, essential members of the community. "Hooked on Phonics" is a $100 million reminder of just how far the profession has fallen. It also is a reminder that there is a huge and hungry "market" for education and that people will spend money when properly motivated.

Will we get the message? Will we dig up the money? Will we spend it intelligently? Will children be better educated 10 years from now? I'm strangely optimistic...if only because we've just about hit bottom. The only way we can go is up. ❑

Editor's note: In future columns, Ken Komoski will show how schools can double the amount spent on instructional materials and technology and, equally important, how to spend it wisely.

EPIEGRAM
Affiliated with EPIE Institute

EPIEGRAM is published in cooperation with EPIE Institute by Sterling Harbor Press, P. O. Box 28, Greenport, New York 11944.

Basic subscription rate for nine issues a year (October through June) is $65. Additional subscriptions to the same address are $30. For addresses outside the U.S. add $10. The rate for subscribers in Consortium (SCISS) states is $45.

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Scop House, Design & Production

EPIEGRAM covers the news, issues, and research that is showing the way for true systemic change in education. In every issue you will read how men and women have made the difference in their schools, and how business is learning how to support education. Every month EPIEGRAM runs a special section devoted almost entirely to new technology and software releases.

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The newsletter of systemic change.
Sterling Harbor Press,
P.O. Box 28,
Greenport, N.Y. 11944

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EPIEgram

The Newsletter of Systemic Change.

Earl L. Fultz, Editor & Publisher | Volume 18, No. 7 | April 1992

THE DIRECTOR'S COLUMN

Mr. Smith (a/k/a Komoski) Goes to Washington....

Ken Komoski
Executive Director
EPIE Institute

Every citizen should get to testify at a subcommittee hearing in our nation's capital at least once. It's a lesson on what is both good and not so good about democracy and our representative form of government.

It is inspiring to be part of the legislative process, to know your voice is being heard by those who make our laws. And architects of public buildings know how to create rooms with impressive dimensions and majestic ambience. It's impossible not to be exalted by the experience – like standing in a grove of redwoods or entering Chartres for the first time.

The date was March 18th, 1992. The occasion, a hearing on H.R. 4104, a proposed bill to give new direction and impetus to educational R&D. There were two days of hearings scheduled, with four panels of experts testifying. I was surprised to find that while some of the panels had four or more people, mine was a panel of one. Instead of the 15 minutes allotted me, I was questioned for another thirty minutes.

I was elated; I won't deny it. Which brings me to the other side of democracy – its wastefulness, not just of money but of time and opportunity.

For, you see, this was the second time I have appeared before an education subcommittee on education on this same subject. The first appearance was 21 years ago. There was the same awe-inspiring committee room, the same official concern for the role of research in educational materials and technology.

Twenty-one years of silence followed. Two score and one years in which billions and billions of dollars have been spent in grand designs to improve education, a lot of the money going down what is arguably the biggest rathole in history, and almost nothing on the kind of research which EPIE Institute has advocated and practiced.

As I left the committee room, I could not help wondering if H.R. 4104 would turn out differently or if it would be—in Professor Y. Berra's great phrase—"*déjà vu* all over again."

continued on back page

The Systemic Vision of H.R. 4014

Brooklyn Congressman, an Ex-Librarian with Clout, Pushes for New Emphasis on Educational R&D

Noting that research and development is recognized as essential in the business and professional world, Major Owens, Congressman from Brooklyn, has called for "world class" educational R&D to lead the country out of its copious problems in education.

At the opening of hearings held last month by the Subcommittee on Select Education of the Education and Labor Committee, chaired by the Congressman, Owens condemned "incremental change and tinkering at the edges" as no solution. The committee's objective in H.R. 4104 is to give R&D new status and new funding.

The Congressman cited a number of examples of federally funded world-class research and development systems that have had immense impact: the National Institutes of Health in health care; the land grant colleges and county agent system in agriculture; the scientific advances which have grown out of R&D sponsored by the Department of Defense.

H.R. 4104 would create a 20-member Educational Research Policy and Priorities Board to consist of educational researchers as well as representatives of teachers, parents, school administrators, and other "stakeholders" in the education system to guide research activities by the OERI (Office of Educational Research and Improvement), headed by Dr. Diane Ravitch, Assistant Secretary, U.S. Department of Education.

The objective of the board would be to end what Congressman Owen termed "the flavor of the month" approach to research, which has long limited the OERI's effectiveness. During the two-day hearing, the Committee heard from four panels of some of the country's top educational research specialists.

One panel consisted solely of Kenneth Komoski, Executive Director of EPIE Institute, who testified to the Office of Education's early interest in research 25 years ago and the effects of its subsequent neglect. ❑

(*See Mr. Komoski's column.*)

Your Consortium and Software Update Begins on Page 3
Featuring the TESS In-Basket of
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Editorial

This country has never been able to grow any heavy-duty philsophers; I can't imagine an American saying "I think, therefore I am." We tend toward pragmatism (I am, therefore I think?) and content ourselves with a more homely, practical breed, J.P. Morgan, for example. "Never be a bear on America," was his comment during one of our periodic boom-and-bust cycles. Don't give up on this country; we'll find our way. Not a bad philosophy in this time of economic downturn.

Then there's Henry David Thoreau, one of our early drop-outs, who built his reputation on three observations: 1) never engage in any enterprise that requires a new suit of clothes; 2) something to the effect that if you see someone approaching with the obvious intention to do you good, you should quickly depart; and, perhaps the most useful admonition of all: 3) simplify, simplify, simplify.

There is a suspicion and a hope that we are about to prove J.P. right, once again, and that we will do so by following Henry David. Simplification has always been as American as apple pie; we've always been suspicious of European realpolitik (Europe is where the pretzel was invented); the arabesque twists and turns of the Middle Eastern approach to almost anything leave one weary of all the wasted energy (why *was* Terry Anderson kept prisoner all those years?); and while the East may seem a little less inscrutable these days, Americans still don't do well at the bargaining table (too inclined to get to the point too quickly). President Bush's hurling on the Japanese prime minister might have represented more than an upset stomach. If straight talk is not their style, how about straight spew?

There's more in the offing. Chastity is making a comeback. Practicing Safe Sex is complicated; No Sex is not. Voters don't want White Papers on how to solve problems; they want action. That's why Generals Schwarzkopf and Powell get mentioned as presidential possibilities, as well as H. Ross (Just Do It) Perot. America is getting tired of bureaucracies. Just when Russia seems to be getting rid of theirs, ours swells another million or so.

Since one of the more doubtful bureaucracies can be found in education, it might do well to recognize that the American public is looking for ways to simplify. And one way to begin is to believe in individual responsibility, in the basic idealism of the teacher who wants to do a good job, and the laudable desire of parents to have their children truly educated. The next step is to give both teacher and parent the kind of information they need to fulfill their responsibilities.

We're not suggesting that administrators commit hari-kari or that curriculum guidelines be scrapped or that school boards vote themselves out of existence; but things are going to change. More money must be spent on educational materials (currently about 1% of total budget nationwide) and everyone in the system—and the system itself—must become more productive.

We are suggesting, moreover, that Thoreau's admonition to simplify can be fulfilled to a significant degree by listening to Ken Komoski on the need for a national educational products information exchange. His are ideas whose time has come...and about time, too, for he has been espousing this philosophy, in one form or another, since the 1960s.

His presentation to Congressman Major Owens's subcommittee on educational R&D suggets a basis for systemic change in education that would vastly increase productivity without requiring any more resources than are currently available.

It has a very simple premise: the persons closest to the student—teachers and parents—are fully capable of making decisions on educational material for that student, if they have appropriate information on which to base those decisions. Mr. Komoski has a plan for making that information available to all, and he can prove it will work since he is already doing it.

We are printing his testimony to the committee, in somewhat abbreviated form, because we believe both Morgan and Thoreau. We just have to be our historic selves: optimistic, as J.P. would want, and cutting through the nonsense, as Henry David advised. Mr. Komoski shows the way.

Earl L. Fultz
Editor & Publisher

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UPDATE

As We Go to Press....

SCISS Roundup

Hoosier Favorite

Every state handles the distribution of TESS a bit differently. In Indiana, for example, Purdue University is administering the distribution of TESS through the Outreach Program of the School of Science and Community Programs, which is part of Continuing Education.

Actual distribution, however, is being accomplished through the Indiana Regional Education Service Centers which cover all geographic regions and have 80% of Indiana schools as members. Each center has considerable autonomy so the actual method of distribution may vary from one region to another.

According to Dr. Dennis Sorge, when the School of Education at Purdue moves into its new building, all members of the faculty will be able to access the TESS database from their computers.

Dr. Sorge reports that as word spreads about TESS there is a growing clamor to be able to utilize it; Purdue and the education centers are implementing the roll-out as rapidly as possible.

TESS is on Georgia's Mind

Dr. Nancy Paysinger tells us TESS is very much on their mind at the Georgia Department of Education. Right now the giant database is being TESSted in a number of school systems to see how best to roll it out during the next school year.

Empire Building

According to Alan Walker, Coordinator of Instructional Services at BOCES III, the group responsible for establishing TESS in New York State, TESS has been distributed to all BOCES units statewide. There have been follow-up meetings and the feedback is very positive.

Since each BOCES unit in the Empire State has considerable autonomy, distribution techniques are left up to each region and no clear patterns have yet emerged. However, most schools are requesting the smaller *Latest and Best of TESS* print version because of a lack of equipment with which to run the electronic database.

continued on page 10

New Funding for OERI Research Gains Support of National Academy of Sciences

Legislation to rebuild the Office of Educational Research and Improvement, now wending its way through Congress, got strong support recently from the National Academy of Sciences. The panel is calling for a policymaking board to oversee the agency and to restructure OERI's functions into "directorates" to focus on particular problem areas. There would also be a separated directorate formed to help reform efforts at the state and local level.

Based on a year-long study by the NAS, the report, "Research and Education Reform," did not indicate specific areas for Federal support of research but noted that an earlier report from the National Academy of Education had provided such an agenda.

In the panel's view, research, while scoring some successes, has an "undistinguished reputation" caused in part by politicization, and a failure to coordinate programs or to support many sustained programs. An even greater impediment has been the "bruising downhill slide" in funding which resulted in attempts for "quick fixes" rather than sustained projects, the report said. It also pointed out that while the current OERI budget is $380 million, only 15% (less than $60 million) is spent on research.

The report said that the emphasis on short-term results was understandable, but that "it is akin to eating one's seed corn." Because of the pervasiveness of this misguided approach, the panel concluded that the agency "needs to be rebuilt, not merely repaired."

While the various recommendations would add as much as $1.3 billion to the Department of Education's budget over a six-year period, the report noted that in the same period of time the nation will spend $1.5 trillion on education. The panel felt that any investment in R&D would reap immense dividends if there was even a one per cent improvement in effectiveness or efficiency in the educational system.

(NOTE: the complete report, "Research and Education Reform," will be available in May from the National Academy Press. The cost is $29 plus $3 S&H. Write the Academy at 2101 Constitution Avenue, N.W., Washington, D.C., or call 202 334-3313 or 800 724-6242.) ❑

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TECH NOTES

Ready for the Revolution?

From IBM: the 9075 PCradio, battery-powered and notebook-sized, can connect to IBM computers by telephone as well as the radio waves of a cellular phone. First customers are expected to be police officers, service technicians, and sales people who spend more time in their cars than their offices.

From Motorola and IBM: a partnership in ARDIS, a company that provides the nationwide wireless data communications in larger metropolitan areas (of which there are more than 400) to be used by PCradio.

From SONY but made in the U.S. of A., a "Computer Walkman." From NEC, the "Ultralite Cellular Workstation," containing portable cellular phone, modem, and notebook computer – $5,999.

From Philips: CD-I (Compact Disk – Interactive). Looks like an ordinary CD player and will play your CDs in stereo. But hook it to your TV and it gives you pictures as well as sound. With a difference: you are in charge. At any point, you can touch a button and follow a related topic programmed into the disk.

Next year, Philips promises it will offer pictures in full motion.

The Art of Buying Tape

Top-of-the-line videotapes (such as Scotch EKG) can be used hundreds of times and will hold color better than lesser breeds. Cheap tapes can deteriorate quickly as particles flake off, producing the dreaded snow effect. However, tests show that different brands can interact differently with different VCRs. Best advice is to test out compatibility before a quantity buy. With some brands, standard quality is pretty much the equal of premium. Go figure.

In audio tapes, formulations do make a difference:

Type I is okay for the spoken word and for inexpensive cassette machines that don't distinguish among the various types of tape.

Type II, for music, features a chromium coating that increases frequency response. No matter what the manufacturer names the tape, the numerals I or II will appear somewhere.

Metal tape is used for high-quality recordings, and it's a waste of money if your recorder/player can't tell the difference.

CD Jamboree

The power of multimedia will be explored at the sixth annual CD-ROM Exposition & Conference, to be held September 29 - October 2, 1992 at the World Trade Center, Boston, Massachusetts. More than 80 leading CD-ROM and multimedia manufacturers, developers, distributors, and systems integrators have already reserved space at the show.

CD-ROM Expo '92 will feature one day of in-depth tutorials, followed by three days of general conference sessions and exhibits. More than 7,000 commercial publishers, corporate developers, system integrators, and distributors representing the business, education, consumer, and multimedia markets are expected to attend the show.

For information on attending CD-ROM Expo '92 contact Rachel Winett, World Expo Corporation, at 508 879-6700, fax 508 879-6700. For information on exhibiting, contact Mitch Hall Associates, 260 Milton Street, Dedham, Massachusetts 02026, 617 361-2001, fax 617 361-9074.

Apple Ships A/UX 3.0, New Version Of UNIX Operating System

Apple Computer began on April 16th to ship A/UX 3.0, its new version of the UNIX operating system for the Macintosh computer. This new version of A/UX incorporates the full Macintosh System 7 operating system, including the QuickTime multimedia extension. It supports the Macintosh Quadra systems, and features simplified installation and enhanced networking and communications. In addition, Apple assures us, A/UX 3.0 will provide a smooth migration path to PowerOpen, the forthcoming open-systems environment under development by Apple and IBM.

Apple touts A/UX 3.0 as a system that will provide large corporations, government agencies, and higher-education organizations with an end-user platform capable of running a wealth of easy-to-use Macintosh applications within an open-systems environment.

Applications developed for Macintosh System 7 and A/UX 3.0 will be compatible with PowerOpen, offering customers software investment protection for years to come. When available, PowerOpen will be a highly scalable, open-systems architecture available on a wide range of computer systems.

For more information, contact Nancy Morrison of Apple Computer at 408 862-6200.

Computer Census

A total of 11 million PCs are now being used for education purposes: 3.7 million in K-12, 5.7 million in colleges, and 1.4 million in industry. An estimated 97% of schools now have at least one computer.

CD-Kodak

Rumor has it that Eastman Kodak may be about to revolutionize photography again with a technology that allows the shooter to use a standard 35mm camera but the "developer" transfers the film images to a compact digital disk. The disk can store up to 100 images which can then be played back on television with a photo CD player from Philips ($400) that will also play audio CDs. Even more intriguing, the photo CDs will be compatible with computer CD players which will allow the photos to be displayed along with graphics, text, and sound. Expect it to be announced and available by midsummer.

McGraw-Hill Updates Popular CD

One of the industry's top ten best sellers, McGraw-Hill's Science and Technical Reference Set, has just been updated and revised. Release 2.0 integrates the current, unabridged editions of the McGraw-Hill Concise Encyclopedia of Science and Technology and the McGraw-Hill Dictionary of Scientific and Technical Terms. A transparent network of 1.5 million hypertext links enables users to jump back and forth quickly among volumes, graphics, and definitions with a simple mouse click or keystroke. It contains more than 7,700 signed articles, 117,000 terms and definitions, and more than 1,700 graphics. List price: $495, available direct (800 262-4729) or from distributors.

Wireless

Techbyte International of Longueuil, Quebec, has announced a wireless computer network system which eliminates the substantial costs of wiring a school, especially valuable in buildings with asbestos problems.

You Can Get Theah from Heah

GeoLocate Plus, an electronic directory and locator system on CD-ROM, is the newest product from Geo Systems, a unit of R. R. Donnelly and Sons, best known for publishing Yellow Pages, but deeply involved in DOS manufacture. The system runs on Windows and can locate, route, and map. Using Donnelly's worldwide digital map data, it can locate any business or residence by address or phone number and find and display the most efficient route from one place to another.

Best Warranty

Here's a first: Best Power Technology, Necedah, Wisconsin, manufacturer of surge protectors, is offering to repair or replace any specified computer equipment damaged should their products fail to protect them. Their Double Lifetime Warranty includes reimbursement up to $25,000 per catastrophe. ❑

EPIEGRAM

Affiliated with EPIE Institute

EPIEGRAM is published in cooperation with EPIE Institute by Sterling Harbor Press, P. O. Box 28, Greenport, New York 11944.

Basic subscription rate for nine issues a year (October through June) is $65. Additional subscriptions to the same address are $30. For addresses outside the U.S. add $10. The rate for subscribers in Consortium (SCISS) states is $45.

Earl L. Fultz, Editor & Publisher
P. Kenneth Komoski, Executive Director, EPIE Institute
Pat Lutzky, Manager, SCISS\TESS

Scop House, Design & Production

EPIEGRAM covers the news, issues, and research that is showing the way for true systemic change in education. In every issue you will read how men and women have made the difference in their schools, and how business is learning how to support education. Every month EPIEGRAM runs a special section devoted almost entirely to new technology and software releases.

EPIEGRAM is not a technical journal. EPIEGRAM is a newsletter for educators who are learning the new technologies, looking for the best possible software, going about the difficult business of learning how to do things differently and better – and systemically.

Commonly a single copy of EPIEGRAM is read by dozens of educators; frequently we receive requests to make as many as fifty copies of our articles.

Are you forced to share your copy of EPIEGRAM? Does it come back from cafeteria with tomato sauce all over it? Or are you one of the trammeled thousands who are suffering the burden of borrowing someone's treasured copy of EPIEGRAM? The solution is simple. Extra subscriptions to the same address cost only $30 a year – $25 in SCISS states. It's cheaper than making copies, too.

One-year subscription $65; SCISS states $45.
Additional subscriptions to same address $30; SCISS states $25.
(please add $10 for addresses outside U.S.)

Enclose with check or purchase order:

Name, Title _____

Organization _____

Address _____

Telephone, Fax _____

The Latest of TESS

Assorted Educational Programs

Alcohol to Dr. Popper

ALCOHOL AND OTHER DRUGS
Learning Multi-Systems
Health: Drugs, Alcohol, and Tobacco; Guidance; Counseling
Grades 6-12
Presents information about the emotional and physical effects of alcohol and other drugs, using a variety of instructional techniques. They answer personal questions that bring them to the heart of the drug and alcohol issue. Part of the Body Awareness Resource Network (BARN).
Apple II+/IIe/IIc/IIgs, $120

ALTERNATING CURRENT CIRCUITS
Shopware Educational Systems
Industrial Arts: Electronics and Electricity
Grades 9-College
Includes lessons on alternating current generation, waveforms, and tranformers. Keeps records. Network version available.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $240.

ANIMATION STUDIO
Walt Disney Educational Media
Fine Arts: Art; Comprehensive; Generalized Tool Programs; Graphics Generators
Grades 5-College
A full-featured animation and paint program utilizing state-of-the-art cel animation techniques common to Disney style to see cel student is working on and three cels behind it. Comes with music, sound effects, and tools to assist in creating animation. compatible with SoundBlaster and Disney's Sound Source. No recordkeeping. Copy protected.
Commodore Amiga, IBM PC and compatibles, $129.95.

APPLEWORKS 3.0
Scholastic
Comprehensive: Generalized Tool Programs; Multi-Function Tools
Grades K-12
A word processor, spreadsheet program, and database manager all in one. Provides users with the three primary computer functions all in one easy-to-use integrated program. Serves as an introduction to computers for the whole school.
Apple II+/IIe/IIc/IIgs, $169.

APPLEWORKS FOR THE TEACHER: TIME-SAVING TIPS, ETC.
J. Weston Walch, Publisher
Computers: Using System and Application Programs; Comprehensive; Generalized Tool Programs; Multi-Function Tools
Grades K-12
Provides teachers with teacher-tested tips, teaching suggestions and classroom applications for using Appleworks. Focii include concepts and techniques for the word processor, database, and spreadsheet modules plus guides to advanced features, sophisticated application techniques, and resources for personal or classroom use. No recordkeeping.
Apple II+/IIe/IIc and compatibles, $49.95.

APPLE WORKS GS
Claris
Comprehensive: Generalized Tool Programs; Multi-Function Tools
Grades K-College
Combines 6 applications: Word processing, spreadsheet, database, communications, graphics, and page layout. For use by teachers in their curriculum and in automating everyday tasks. Allows memory testing and database conversion. For use by older students. Contact supplier for price.
Apple II+/IIe/IIc/IIgs.

AUTOSKILL: COMPONENT READING SUBSKILLS PROGRAM
Unisys Corporation
Reading: Comprehension Skills; Reading; Decoding Skills
Grades K-College
Starts with a series of more than 40 diagnostic routines, does testing, training and record-keeping. Works on the reading difficulty with the student, using the speech synthesizer as well as normal screen interface. Autoskill uses automaticity theory to improve reading skills. Contact supplier for price. Average lesson 10 minutes. Keeps records. Network version available.
Unisys 1100/2200.

BANK STREET SCHOOL FILER WORKSHOP MANUAL
Sunburst Communications
Teacher Training
Grades 5-12
Includes material and helpful hints for presentations, workshops, and overall use in implementing database programs in the classroom.
Apple II+/IIe/IIc/IIgs, Commodore 64/128, $69.

BANNERMANIA
Broderbund Software
Comprehensive: Generalized Tool Programs; Publishing and Printing Tools
Grades K-12
Users can easily create output with a wide variety of color and black and whites. Full preview allows users to redesign their banners to fit their needs before printing. No recordkeeping.
IBM PC and compatibles, $34.95; Apple II+/IIe/IIc/IIgs, $34.95; Apple Macintosh 512E, Plus, SE, II, $59.95.

BIOLOGY EXPLORER: CARDIOVASCULAR SYSTEM
Wings of Learning
Science: Biology; Organ Systems; Anatomy and Physiology; Health; Diseases
Grades 9-College
Manipulate factors that influence blood flow, such as heart rate, blood pressure, stroke volume, and hormonal stimulation. Allows students to investigate physiology of vascular diseases and effect of cholesterol levels. Special detectors enable "zooming" into cardiovascular system. Part of the Biology Explorer series. Network version available.
Apple Macintosh 512E, Plus, SE, II, $125

BIOLOGY EXPLORER: GENETICS
Wings of Learning
Science: Biology; Heredity
Grades 9-College
Students investigate basic concepts of heredity, from simple Mendelian dominance to sex-linkage, chromosome mapping, and population genetics. Using icons for flies, rabbits, and butterflies, students plan and execute breeding experiments,
calculate phenotype ratios, and test hypotheses. Part of the Biology Explorer series. Network version available.
Apple Macintosh 512E, Plus, SE, II, $125.

BIOLOGY EXPLORER: PHOTOSYNTHESIS
Wings of Learning
Science: Biology; Plant Organisms
Grades 9-College
Students "zoom" into a plant's leaf and investigate photosynthesis by manipulating variables such as light intensity and wavelength. Allows students to add compounds that affect the rate of this process. In this way, students explore the light and dark reactions of photosynthesis, as well as the relationships between them. Part of the Biology Explorer series. Network version available.
Apple Macintosh 512E, Plus, SE, II, $125.

BODY MANAGEMENT
Learning Multi-Systems
Health: Physical Fitness; Home Economics; Foods
Grades 6-12
Teens get information on balancing diet and exercise and compare the nutrition of a diet they choose with that of one based on recommended daily allowances. Part of the Body Awareness Resource Network (BARN).
Apple II+/IIe/IIc/IIgs, $120.

BOOKMATE
Sunburst Communications
Reading
Grades 4-6
Features 300 books written by highly noted and popular authors. Four activities help students find a book to read.
Copy protected.
Apple II+/IIe/IIc and compatibles, $65.

BRADFORD CLASS MANAGER
William K. Bradford Publishing Company
Comprehensive Class Management Aids
Grades K-College
A platform gradebook that calculates, records, reports, and forecasts student/class performance. Can accommodate an unlimited number of students and gradable activities and offers eleven different sort options.
Apple Macintosh 512E, Plus, SE, II, $99.95.

BRADFORD DISCOVERY
William K. Bradford Publishing Company
Science: Ecology and Environment; Social Sciences
Grades 6-12
Tool for collecting, analyzing, and interpreting numerical data. Student investigators analyze a wealth of data from international sources. Data available on floppy discs and CD-ROM from Dun and Bradstreet, World Health Organization and UNESCO, Food and Agricultural Organization, and World Resources Institute's Guide to Global Environment. Network version available.
Apple Macintosh 512E, Plus, SE, II, with CD-ROM player, $750.

BRADFORD SKY TRAVEL
William K. Bradford Publishing Company
Science: Astronomy
Grades 6-12
Students can study stars and planets from anywhere on Earth from 10,000 years in past to 10,000 years in future. Includes on-screen "sky-window," charts over 1200 stars and 300 deep sky objects. All 88 constellations depicted, accurate lunar and solar eclipses, and on-screen information available for any object. Generates sky maps. Allows teachers to create tests. Network version available.
Apple Macintosh 512E, Plus, SE, II, $75.

CAPACITORS AND CAPACITANCE
Shopware Educational Systems
Industrial Arts: Electronics and Electricity
Grades 9-College
Includes lessons on capacitors, types of capacitors, capacitive reactance, and capacitance of a circuit. Keeps records. Network version available.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $320.

CAREER OPPORTUNITIES IN COMPUTER AIDED DRAFTING
Shopware Educational Systems
Guidance: Career Information; Engineering; CAD
Grades 6-College
Covers career opportunities in CAD, discusses whether CAD is for you, gives an introduction to CAD basic, CAD hardware, and application of CAD principles. Keeps records. Network version available.
IBM PC and compatibles, Apple II+/IIe/IIc and compatibles, Apple Macintosh 512E, Plus, SE, II, $79.95.

CHEMISTRY: BALANCING EQUATIONS
Minnesota Educational Computing Corporation
Science: Chemistry
Grades 7-12
Introduces students to writing and balancing chemical equations. Upon completion, students will be able to list names and symbols for common elements; distinguish chemical symbols and formulas; write formulas for chemical compounds; and balance basic formulas for four types of chemical reactions. Contact supplier for price.
Copy protected.
Apple II+/IIe/IIc/IIgs.

CHILDREN'S WRITING AND PUBLISHING CENTER
The Learning Company
Comprehensive: Generalized Tool Programs; Publishing and Printing Tools; Word Processors
Grades 2-9
A powerful productivity tool that helps students build written communication skills and produce a variety of finished documents. Features word processing, picture selection, and page design capabilities. Can be readily integrated into many curriculum areas with its broad range of applications. Network version available.
Apple II+/IIe/IIc/IIgs, $89.95; IBM PC and compatibles, $99.95.

CLASSROOM NEWS INTERNATIONAL
Educational Activities
Comprehensive: Generalized Tool Programs, Publishing and Printing Tools, Word Processors
Grades 5-12
An easy-to-use word processor/classroom publishing program made expressly for school use. Keeps records. Copy protected. Network version available.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $65.

CLASSROOM TOOLBOX
Sunburst Communications
Comprehensive: Drill and Test Generators
Grades 3-College
Teachers can create test formats, such as multiple choice, fill-in-the-blank, matching, true/false, crossword, word find, and more. They can generate various tests and activities from the same data. Will print out student worksheets and answer keys. A mini word processor enables teachers to create database of questions and answers.
Apple II+/IIe/IIc/IIgs, $75.

THE CLASSWORKS STARTER PACKAGE
J. Weston Walch, Publisher
Comprehensive: Generalized Tool Programs; Miscellaneous Tools; Computers; Using System and Application Programs
Grades 6-12
An introduction to The Class Spreadsheet, The ClassWriter, and The Class Filer, by J. Weston Walch, Publisher, which all share the same pull-down menus and simple commands. Student book gives real-world projects.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $69.95.

CLEANWATER DETECTIVE
Minnesota Educational Computing Corporation
Science: Ecology and Environment
Grades 3-8
Students become cleanwater detectives as they investigate various water pollutants. Through research and testing, they gather data about streams, rivers, and lakes throughout a county. They find the pollution, its source, recommend a solution, and report to the proper authorities. Part of the Science Inquiry Collection.
Apple II+/IIe/IIc/IIgs, $59.

COLOR 'N' CANVAS
Wings of Learning
Fine Arts: Art
Grades 1-8
Developed especially for classroom use to help teach art concepts. Includes a variety of colors for students to use, mirroring, zoom mode, easy fills, and a template. Network version available.
Apple II+/IIe/IIgs, $99.

COMPUTER AIDED DESIGN
Shopware Educational Systems
Industrial Arts: Drafting and Mechanical Drawing; Engineering; CAD
Grades 6-College
Reviews the configuration, usage, and advanced application of common CAD systems. Lessons include CAD systems configuration; basic function of CAD systems; analysis, modeling and simulation; group technology; and system configurations. Keeps records. Network version available.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $119.95.

COMPUTER AIDED MANUFACTURING
Shopware Educational Systems
Industrial Arts: Drafting and Mechanical Drawing
Grades 6-College
Covered are a number of topics that can be found at the shop floor level. Included are descriptions of various automated processing machines,the programming that runs them and how they can be directly tied to the CAD system. Keeps records. Network version available.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $119.95.

COMPUTERS IN MANUFACTURING
Shopware Educational Systems
Computers: Computer Literacy Applications; Industrial Arts
Grades 6-College
Contains lessons that deal with "Types of Computers," "How Computers Operate," and "Where They Are Used in Manufacturing." A number of computer-related terms are defined and used along with animated graphics. Keeps records. Network version available.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $89.95.

CONGRESS IN ACTION
Scholastic
Social Sciences: Civics and Government
Grades 7-12
Students learn the inner workings of Congress as they research and analyze the political process and take positions on important issues. Part of the Appleworks Curriculum Database series. Does not include bank or post office.
Apple II+/IIe/IIc/IIgs, $59.95.

CONSULTANT DIAGNOSTICIAN
Exceptional Innovations
Teacher Training: Guidance Counseling
Grades K-College
Provides consultants working collaboratively with teachers with strategies for avoiding or defusing the misunderstandings, power struggles, and other types of interpersonal traps which often occur during consultation.
IBM PC and compatibles, Apple II+/IIe/IIc and compatibles, $50.50.

CULTURE 1.0 - HYPERMEDIA GUIDE TO WESTERN CIVILIZATION
Cultural Resources
Social Sciences: World History; Generalized Tool Programs; English and Language Arts; Literature
Grades 5-College
A 5MB multimedia contextual guide to more than 3,700 years of History, Art, Literature, Music, Philosophy and Religion. Features over 200 graphics, 75 signature melodies, 1,850 cards, 2,000 hypertext links, and 90 essays on topics ranging from the Black Plague to Impressionism.
IBM PC and compatibles, Apple Macintosh 512E, Plus, SE, II, $175.

DATAQUEST SAMPLER
Minnesota Educational Computing Corporation
Comprehensive: Generalized Tool Programs; Database Managers
Grades 6-12
Provides teachers and students with a number of curriculum-related database activities for the classroom. Databases include British monarchs, states, U.S. agriculture, car shopping, creatures, elements, mammals, paintings, American words, and German authors. Contact supplier for price.
Apple II+/IIe/IIc/IIgs.

DECISIONS, DECISIONS: THE ENVIRONMENT
Tom Snyder Productions
Social Sciences: Civics and Government; Ecology and Environment
Grades 5-12
Students interpret science, then apply what they learn to make social policy decisions. They experience political trade-offs of acting on decisions dealing with landfills, water pollution, recycling, greenhouse effect, land use, waste disposal, much more. Includes "Critical Thinking" booklet. Part of the Decisions, Decisions series. Network version available.
Apple II+/IIe/IIc/IIgs, Apple Macintosh 512E, Plus, SE, II, IBM PC and compatibles, $199.95.

DIASCRIPTIVE READING: SOCIAL STUDIES
Educational Activities
Reading: Reading in Content Areas; Social Sciences
Grades 4-8
Identifies weaknesses and gives help in reading strategies at five different levels. Has diagnostic tests and five developmental reading programs. Covers vocabulary, main idea, details, inference, and sequence.
Apple II+/IIe/IIc/IIgs, IBM PC/PC-XT/PCjr, Tandy 1000/3000, $335.

THE DIGESTIVE AND EXCRETORY SYSTEM
Troll Associates
Science: Anatomy and Physiology; Reading; Reading in Content Areas
Grades 4-8
Uses animated learning activities to help students understand digestive and excretory systems. Copy protected. Network version available.
Apple II+/IIe/IIc/IIgs, $39.95.

DINOSAUR DISCOVERY KIT
First Byte
Reading: Reading in Content Areas; Science; Natural History; Reading; Reading Readiness
Grades 3-8
Using a game format and a create-a-story-with-pictures-and-words format students learn about prehistoric creatures. Works on visual discrimination skills.
IBM PC and compatibles, Apple Macintosh 512E, Plus, SE, II, Commodore Amiga, $39.95.

DISCIPLINE DIAGNOSTICIAN
Exceptional Innovations
Comprehensive: Class Management Aids; Miscellaneous Aids
Grades K-12
Provides the teacher practical suggestions for responding to twenty of the most common student behavior provlems, including destroying property, interrupting, daydreaming, fighting, swearing, nonverbal gesturing, and talking.
IBM PC and compatibles, Apple II+/IIe/IIc and compatibles, $50.50.

DISCOVERY READING FOR SCIENCE
Educational Activities
Reading: Reading In Content Areas; General Science
Grades 4-8
Combines science passages and specific reading comprehension skills, including context, syntactic, and prediction clues; signal words; and pronoun referents. Keeps records.
Apple II+/IIe/IIc/IIgs, TRS-80 Mod III/IV/Color Cmp, $159 (each disk has 4 stories on one reading level at $39.95).

DONALD'S ALPHABET CHASE
Walt Disney Educational Media
Reading: Reading Readiness
Grades preschool-K
Exercises recognition and phonetics. Preschoolers are invited to join Donald in this crazy game of hide-and-seek as he scrambles from one end of the house to the other to recapture all the 26 letters of the alphabet.
IBM PC and compatibles, Commodore 64/128 $14.95.

DR. DISK'S ADVENTURE
Sunburst Communications
Computers: Computer Literacy; Familiarization; Reading; Comprehension Skills
Grades 4-8
An interactive reading program where students must make decisions based on their knowledge of proper disk care and the use of microcomputer software and hardware. Copy protected.
Apple II+/IIe/IIc and compatibles, $65.

DR. POPPER'S PROBLEM-SOLVING SCIENCE
Educational Publishing Concepts
Mathematics: Basic Skills; Multiple Topics; General Science
Grades 5-8
Science is approached multilaterally, stressing a practical approach to problem-solving. A five-disk program with extensive printed material, including pre- and post-tests, worksheets, teacher's guide, and answer key. Hands-on lab simulation included. Keeps records. Copy protected. Network version available.
Apple II/II+/IIe/IIc, $159.50. ❑

SCISS Roundup *continued from page 3*

Michigan MACUL

Michigan held its annual MACUL conference last month and TESS was there, thanks to Barbara J. Harper, Specialist for the Genesee Intermediate School District. Barbara, whose tireless devotion to spreading the news about TESS reminds one of the legend of Johnny Appleseed, was ably assisted by Brenda Toodle, Media Consultant for the Detroit Public Schools and a support person for TESS in that area.

Incidentally, MACUL is not a new frozen dessert from McDonald's, but the Michigan Association for Computer Users in Learning. It was a big affair and the competition for attention was tough. More than 300 presentations were made, but Barbara and Brenda were able to present the TESS story to several dozen educators, and more than 30 of them stayed to get hands-on instruction.

Texas Roundup

All 20 Educational Service Centers in Texas are primed and ready. They have completed their training and are ready for the roll-out to the schools which is going on right now.

Interesting things are happening in Texas. They are instituting a Help number for teachers to call. They have a bulletin board for TESS on TENET (statewide online service) and will have TESS available online as well.

According to Karen Kahan in the Office for Technology, they expect TESS to be firmly in place in all schools with training complete just as the anticipated Technology Allotment becomes available. Under this plan, there will be an allotment of $27 per student for the next school year with the money earmarked for technology only. Ms. Kahan reports that is one reason there is such great enthusiasm for TESS in Texas. ❑

Ready or Not, CD-ROM Is

The first in a series of interactive CD-ROM storybooks has just been released by Broderbund. Based on a best-selling book, *Just Grandma and Me* by Mercer Mayer, this is an animated, interactive whole-language approach to reading and word-recognition.

Grandma was specially designed to take advantage of CD-ROM's immense potential for animation, music, and sound effects. The student is in control; a click of the button and cows moo and people talk and words get pronounced. It also includes versions in three languages: English, Spanish, and Japanese. Available now for Macintosh with an IBM version later this year. $40-50. Broderbund Software. Other titles following soon.

WordStar and Apple Bundle Products

WordStar International, when the company called itself MicroPro, produced the first word-processing program for personal computers, WordStar. It is still alive and going str...well, still going. The experts who write for computer magazines profess to hold it in high contempt. One may suggest two reasons for this: 1) much of computer journalism is lodged securely in the deep pocket of either Microsoft or Apple, and GUIs are the one true religion; 2) the experts don't know how to touch-type. WordStar is strictly a keyboard-interface program, and for those who do know their way around the keyboard it can be a pleasure not to have to interrupt the flow of work to search, grab, and fumble with mouse, trackball or—the horror, the horror—light pen. We have used it for nigh on to a decade - first with a CP/M Osborne with a two-inch monitor (not a misprint), the Stanley Steamer of PCs.

We were thus surprised—on the whole pleasantly, but with a trace of doubt, as with a faint sniff of treachery in the wind—to learn that WordStar International announced on April 21st that they had reached an agreement with Apple Computer.

The cold details:

Two WordStar writing tools—Correct Grammar and the American Heritage Dictionary—will be bundled with all Macintosh computers sold through Apple's Educator Advantage Program. This special program will run from May 1 through August 1, 1992.

Correct Grammar is a grammar and style-checking application for Macintosh, Windows, and MS-DOS users. In a single pass, it checks for errors in grammar, spelling, punctuation, syntax, and style. Correct Grammar for the Macintosh has Balloon Help to give users context-sensitive information.

The program supports standard text, Microsoft Rich Text Format (RTF) and Claris Styled Text, allowing Correct Grammar to check text in any text-based Macintosh application – not just word-processing software.

The Dictionary for the Macintosh is a Desk Accessory available from the Apple menu no matter what application is running. It includes 116,000 definitions, the complete Roget's II Electronic Thesaurus with 500,000 synonym choices for 42,000 words, and a reverse search capability called WordHunter.

For more information, call 800 523-3520.

– Meg A. Beit

Best-Selling Schoolware

G. Meier, Inc., reports that the top ten best-selling educational software titles in March were: 1) New Math Blaster Plus (Davidson); 2) Reader Rabbit 2 (Learning Company); 3) Where in the World is Carmen Sandiego (Broderbund); 4) The Oregon Trail (MECC); Where in America's Past is Carmen Sandiego? (Broderbund); 6) The Playroom (Broderbund); 7) Super Solvers Spellbound (Learning Company); 8) Alge-Blaster Plus (Davidson); 9) Super Solvers Outnumbered (Learning Company); and 10) Where in the USA is Carmen Sandiego? (Broderbund).

Presentation
to The House of Representatives Select Committee
on Issues Relating to H.R. 4104,
the Honorable Major Owens of New York Presiding
by
Kenneth Komoski
Executive Director
Educational Products Information Exchange Institute
March 18th, 1992

Thank you for this opportunity to speak to you about an area of information research that represents a consistent omission in Federal support during the last quarter of a century.

It is this particular *omission* that has been the singular and consistent *mission* of EPIE Institute ever since it was founded 26 years ago with the help of modest Federal funding of $139,000. Our mission has been to research and to create an exchange of unbiased information about the content and quality of education products that are purchased and used for instruction by schools.

Such products are used during more than 90% of the 30 billion hours of instructional time required of the nation's 40 million learners each year.

The mission we continue to pursue is based on a three-point premise:

1) It is important to involve all education consumers—teachers, parents, and learners themselves—in the process of evaluating and selecting materials for learning.

2) There must be a mechanism for gathering and exchanging unbiased evaluative product information...and to disseminate it quickly and inexpensively to those who need it.

3) This mechanism must be used to [close a serious gap]: neither consumers nor producers of teaching/learning materials systematically share information to create better products.

> [Mr. Komoski noted that most such information now comes from those selling the product, hardly an unbiased source. He also noted that with the electronic, digitized nature of much education media today the collection and dissemination of product improvement information is much simpler than when he first testified before a congressional subcommittee 25 years earlier.]

Without such an unbiased information exchange, education consumers will continue to be surrounded by a commercial cacophony that, willy-nilly, adds to the faddism that has plagued education far too long. ... The solution is an exchange of reliable, unbiased, easy-to-access (and -understand) information that is available to every school and home consumer – a nationwide, adequately funded, educational products information exchange.

In short, we agree with the statement on page 31 of this committee's *Findings and Considerations*: "OERI cannot expect the 'marketplace'—operating alone—to determine what eventually succeeds and fails."

It is both tragedy and travesty that [no such information exchange] exists. The tragedy is more poignant when we realize how little money it would take...by building on the know-how and existing databases that EPIE Institute has been developing for the past decade.

The cost would be under $5 million a year during the next three years....

It could be accomplished most easily by expanding on EPIE Institute's established work, which is done largely by trained teams of school and university-based consultant-researchers, many of whom have volunteered to contribute their services to help EPIE pursue its persistently under-funded efforts.

Over the years, EPIE has been funded by private foundations whose generosity has partially compensated for a lack of Federal research support.

Despite a continuing funding deficit, EPIE persists and has managed to build and maintain the *only* comprehensive database of unbiased descriptive and evaluative information on education software products (more than 10,000 of them from more than 1,000 publishers).

This database is accessible, free of charge, to all educators in those states that have joined with EPIE to form the States Consortium for Improving Software Selection (SCISS). Through the Consortium, each member state is provided an unlimited license to distribute the database for use in all its educational institutions. In Texas, for instance, the EPIE database of educational software is being made available to teachers in all 6,300 schools at a cost of less than four dollars a school!

In addition, we have designed and are developing a much more comprehensive database, The Integrated Instructional Information Resource (IIIR), which has many uses:

- it can analyze the alignment of all types of learning materials with a school's or a state's curriculum framework and testing programs;
- it can identify and align non-textbook resources;
- it can be used to create customized, school-based, sub-databases to help teachers plan and manage all of a school's instructional resources;
- it can be expanded to include all materials, curricula, and tests in all areas.

When publishers claim, as they invariably do, that a particular textbook aligns 90% or better with a school's curriculum, this EPIE database often demonstrates that *even a 90% alignment may relate to no more than 40% or 50% of a textbook*. In other words, as much as half of a given textbook may not relate to the curriculum at a given grade in a given school because it addresses content dealt with at other grades, in other schools, or in other states. We find similar alignment problems with computer-based instructional systems.

Unfortunately, without access to a database that can show teachers which portions of a book align with 90% of the curriculum their students are required to learn, untold instructional hours are wasted. Using this database, teachers find which non-textbook resources are available to them to compensate for the inevitable shortcomings of a particular textbook.

Were it to be used by textbook publishers, this particular database could greatly facilitate the advent of customized textbooks (already beginning in certain sectors of the college market).

We see this database as the foundation on which the fully-developed educational product information exchange [I have been describing] can be built...through a combination of foundation and Federal grant support.

Were this to occur soon, by 1995 every school and home consumer of educational products in the country could have ready access to unbiased, independently researched information...the user would be able to specify and receive information based on a specified learning need and learning characteristics, intended outcome, preferred medium, teaching approach, price range, level of skills in reading, thinking, problem solving, etc.

We see this access being provided to schools through the country's 75,000 school libraries (for teachers) and through public libraries (for parents and home consumers). Special versions might be available through computer software outlets and bookstores.

We also see a fully developed Educational Products Information Exchange as a complement to the Department of Education's Smartline Initiative. We also see its dissemination facilitated by the growing

Testimony continued from preceding page

States Consortium, managed by EPIE, as well as the Community Learning Center Network envisioned by the U.S. Chamber of Commerce, using Internet, which would enable on-line, at-home use.

We also see the local use of the Exchange supporting the work of the District Education Agents proposed in H.R. 4104, long needed by educators and parents.

> [Mr. Komoski noted that once the program was in place, paid for by foundation and Federal funding, the cost of continuous updating and dissemination could be sustained by modest contributions of as little as $100 a year from schools and public libraries, and fees from parents willing to pay for home access to the information.]

In conclusion, because of the Federal omission for research, support for an educational products information exchange has had to come from the private sector and it has been spotty. Given this history, it seems valid to end with two questions:

1) Why hasn't there been Federal research support for the full development of such an exchange during the past quarter of a century?

2) Isn't now the time to provide such support when it can build upon work that is already underway and that directly relates to the improvement of the quality of each of the 30 billion instructional hours engaged in each year by our country's 40 million young learners? ❑

The Director's Column continued from front page

The optimism that has sustained me for 25 years as EPIE's Director is not about to desert me now. One reason for hope is that whereas most of our duly elected officials are lawyers, Rep. Major Owens, the chairman of the committee, was a librarian before going into politics. Also, he represents one of the more difficult districts in Brooklyn, one where being streetwise is as essential to survival as learning to read and write.

In the movie *Mr. Smith Goes to Washington*, Jimmy Stewart, the idealist, finds out that he is being played for a patsy. As I recall the story, everything turns out all right in the end – and he doesn't have to wait 21 years. So I hope I won't have to wait another 21. ❑

(Editor's Note: a précis of Mr. Komoski's remarks before the committee begins on page 3.)

BY COURTESY OF THE NEW YORK DEPARTMENT OF EDUCATION

OLD STONE SCHOOL-HOUSE BUILT NEAR HOOSICK FALLS IN 1812

EPIEgram
The newsletter of **systemic** change.
Sterling Harbor Press,
P.O. Box 28,
Greenport, N.Y. 11944

BULK RATE
U.S. POSTAGE
PAID
PERMIT NO. 38
GREENPORT,
NY 11944

EPIEgram

Double Issue! The Newsletter of Systemic Change.

Earl L. Fultz, Editor & Publisher | Volume 18, No. 8/9 | May-June 1992

THE DIRECTOR'S COLUMN

Information - The Fifth Freedom

by

Kenneth Komoski

Ken Komoski
Executive Director
EPIE Institute

President Franklin D. Roosevelt's idea of "The Four Freedoms," eventually embodied in the Atlantic Charter, rather neatly summed up the minimum necessities for civilized human life: Freedom of Speech and Expression, Freedom of Worship, Freedom from Want, and Freedom from Fear. I think it is time to add a fifth "Freedom:" Freedom from Ignorance. Or, to put it positively, "Freedom of Access:" that is, Access to Information.

A high school "graduate" who can't read is only marginally part of the 20th Century and not at all prepared to enter the 21st.

Anyone who doesn't know much math is trapped for life in some menial occupation or, very likely, with no work at all.

Illiteracy is only part of the reason—albeit a big one—why a person is denied access to information. Increasingly, a lack of knowledge of computers will keep one ignorant in many areas. Indeed, half the entry-level jobs of the future will require some knowledge of computers.

Even well-educated people and well-meaning people have their problems with access to information, if only because there is so much of it. Or it's stored in a way they can't access easily.

Is there any real difference between a teacher who can't access information through a computer or a CD-ROM and the problem student who can't read? To my mind they just have different levels of ignorance.

My concern is that in an information age, one heavily dependent on technology, anyone who graduates who cannot use that technology is not educated. Period. I don't have much patience with excuses either. I believe the old adage that "If there's a will there's a way."

Which expenditure will best prepare a kid for the 21st Century: a new gym, or a batch of computers with software carefully selected from TESS? I believe every child has a right not only to an education, but to a quality education, and that

continued on back page

TESS and SCISS

The Database and the Consortium Essential to Curriculum Reform

An Interview with Ken Komoski, Executive Director of EPIE Institute

Q: What is TESS?

A: TESS—which stands for The Educational Software Selector—is a database which contains key information on more than 12,000 educational software programs. Using TESS, the K-12 educator can quickly, easily, and inexpensively find exactly the right educational software for teaching/learning situations.

Q: What is SCISS and why was it formed?

A: SCISS stands for States Consortium for Improving Software Selection. It was formed to provide a low-cost way to make TESS available to states and to maintain and improve the database, which costs about $25,000 per year. The cost for a state the first year is $25,000, but since the Consortium is not-for-profit, the members pay only their share of the costs in subsequent years, with the cost diminishing as more states join. For example, if there are 20 states in the Consortium, our goal for 1992, the cost could be but $12,500 a year. However, the first-year membership fee for new states remains at $25,000.

Q: Exactly what does TESS provide?

A: My answer to that is for you to imagine you are a teacher who wants to find an educational program for her fifth-grade class to teach a science lesson on the working of the human body. She has only $75 to spend, wants to teach using simulation, and it has to be for a Macintosh. The question is: where does she start to look? She will probably ask friends who teach fifth grade; she will go to the media center, if the school has one, and somewhat the same process will take place: they look in computer learning magazines and, of course, they will ask the various vendors' sales representatives. It is a process that can take days, weeks, even months, and when she finally makes a decision, it will

continued on page 11

Your Consortium and Software Update Begins on Page 7
Featuring the TESS In-Basket of
***The Latest* Educational Software!**

Editorial

HOW TESS & SCISS & IIIR CAME TO BE

(With apologies to Rudyard Kipling)

Hear and attend O Best Beloved, for this is the way it was when the world was younger and educators across the land first met technology and turned their backs, blind to the fact that this would be the world for which their students must be prepared.

Around them, the world changed, computers foretold the weather, guided smart bombs, took us to the moon and back, sent Voyager to photograph the planets, but educators, O Best Beloved, still lived in the 19th Century, and taught with chalk and talk, hands on the desk, quiet please, memorize and test.

At home, the student played computer games, watched a glass tube that spanned the world, programmed the family VCR, made home videos, knew Dolby, digital, Nintendo, used Dad's computer – then went to school and whooshed back to the past with chalk and talk, quiet please, memorize and test.

The educators had their reasons, O Best Beloved, for living in their cocoons – "no money," "it didn't fit the curriculum," and it was all so complicated and difficult and besides that's not teaching, teaching means standing on your feet all day and talking, cajoling, explaining, punishing (but also clamoring for shorter hours, and overtime, better pensions, COLA raises), no technology could do what teachers do – or could it, O Best Beloved, and sometimes do it better? Was there fear here?

Some teachers said they knew they weren't teaching very well, but the system hemmed them in with rules and regulations and didn't let them teach (true enough) and there was no money (though there always seemed to be enough for sports) so getting one computer was big news but who knew how to run it, and what's "software," anyway, and so, like lemmings, they did this year what they did last, and the world, O Best Beloved, passed them by.

Not everyone; but good will is not enough and the dead hand of the past obstructed all but the most persistent and it must be asked: can leopards change their spots and educators change their archaic ways? The rumble of discontent grows loud, one senses a revolution in the making, a tearing down of ancient temples and a rebuilding for the new age of Technology, because without it, O Best Beloved, America will have had its Century and the next one will belong to someone else.

Somethin't Gotta Give

For the past decade, the federal government has been going into debt at a phenomenal rate ($400 billion this year alone). No one wants to talk about it, particularly politicians and those on the receiving end of the largesse. But the crunch has to come. The editors of EPIEGRAM were greatly impressed with an article in the April *Atlantic Monthly* by Neil Howe and Philip Longman, "The Next New Deal." Here are a few significant statistics from that article, which should be required reading for anyone concerned about the future of America. Among the many points made by the authors is that "entitlements" favor the rich over the poor, the old over the young, consumption over saving and, generally speaking, make no economic sense.

The federal railroad retirement system (established in 1935) costs the federal government $7.8 billion a year. The average direct cash subsidy to the 30,000 biggest-grossing farmers in America was $50,000 ($1.5 billion). Last year's payments to bail out the S&L's came to $101.8 billion.

On average, households with incomes under $10,000 collected a total of $5,690 in benefits; on average, households with incomes over $100,000 collected $9,280. One half (at least $400 billion) of all entitlements went to households with incomes over $30,000. One quarter (at least $200 billion) went to households with incomes over $50,000.

The government's benefits to Americans age 65 or older in 1990 averaged $11,400, more than ten times what it gave to each child – yet 3.6 million senior citizens were below the poverty line. Households with incomes of under $10,000 last year received almost no benefits from child-care credit. Of the $3 billion this cost the taxpayer, $1.2 billion went to those with incomes over $50,000 a year.

Today 60% of all federal benefit spending flows to the 12% of Americans who are age 65 or older. Today's retirees receive benefits worth two to ten times what they would have earned had they invested all their lifetime Social Security taxes, both their own and their employers, in Treasury bonds. Social Security benefits to households with incomes of over $50,000 amount to $55 billion. The typical congressman retiring in 1991 could look forward to lifetime benefits of $1,098,735; in 1993, $1,523,262.

A hundred billion here, a hundred billion there...pretty soon it adds up to real money.

Beyond the News....

Kentucky Classroom Cliffhanger

After months of wrangling and years of waiting, Kentucky's ambitious plan to equip every schoolroom in the state with computers and link all schools electronically has been approved.

Costing an estimated $400 million—it will take six years to complete—, half the budget will come from a special state fund, the remainder from the local school systems.

While each of the state's 176 school districts will adopt its own technology plan, only those which are compatible with the master plan will qualify for state funding.

In addition to at least one computer for every six students, classroom workstations will be equipped with large-screen television monitors. This will allow for instruction to be delivered from either the computer network or the state's extensive courses delivered by satellite.

Glass Half Full

American competitiveness is being re-evaluated and the picture is somewhat better, optimists say, than the doomsday scenario some predict. In a book due from M.I.T. Press this fall, the co-authors, Prof. Edward N. Wolff, an economist at New York University, and David Dollar of the World Bank, suggest America is holding its own or better.

Groaning under the unwieldy title of *Competitiveness, Convergence and International Specialization*, the book's theme is that countries will tend to specialize and that a balance will ultimately result. In this scenario, winners result from two kinds of investment: financial and intellectual.

In other words, this is no time to let up on education reform – brains can't be wasted.

"Engineering Is for Everyone"

"A sparkling approach" is one reviewer's comment on a new video about careers in engineering, "Engineering Is for Everyone." Sponsored by the usually staid American Society for Mechanical Engineers (ASME), the 12-minute video is anything but. Produced by Audio Visual Directors (New York City), it has already received awards and recognition for creativity and impact. Its narrator, an enthusiastic young lady, shows that math and science is interesting and fun, and it features engineers, particularly women and minorities, from a number of disciplines.

The program materials include a teacher's discussion guide and two sets of activity worksheets. One set is designed for students in grades 3 and 4, the other for grades 5 and 6.

If sent back within a week after making duplicates, the videotape is free. Address inquiries to: Video Outreach, P. O. Box 12057, Hauppauge, New York 11788.

(Note: More than 20,000 engineers of all kinds have volunteered to talk to students about choosing engineering as a career – up from 10,000 a year ago. Contact local engineers if they don't contact you.)

E.T. Goes to College

E.T.—that stands for Electronic Transmission—is the newest service being offered colleges as a way to cut down the high cost of sending and receiving student academic transcripts.

Utilizing a technology known as electronic data interchange (EDI), BT America and Information Associates, a division of Dun & Bradstreet, E.T. can show savings of up to 50% – which at some colleges can mean a half million a year or more.

Traditionally used for inter-company communications, EDI is the computer-to-computer exchange of information in a public standard format. Initially, the companies will market the service to more than 3,500 colleges and universities and 83,000 K-12 schools.

For more info: David Callisch at 408 922-7583 (BT) or Gayle Steinberg at 716 467-7740 (Information Associates).

California Voucher Vote

If California is truly the #1 trend-setting state (Megatrends says that whatever California is doing currently will have gone national in ten years), the fact that it is going to vote on vouchers this fall should be of more than ordinary interest.

The plan calls for public "scholarships" or vouchers redeemable at public or private schools, including parochial schools. If the measure gets on the ballot (proponents have gathered almost a million signatures), it will be the most far-reaching voucher system yet. Ten other states have some form of parental choice, but all within the public-school system.

The proposal is getting some heavyweight backing, including Senator John V. Tunney, California Democrat, and former Secretary of Education William J. Bennett. A coalition of groups representing administrators, the state P.T.A., and the 230,000-member California Teachers Association have vowed to raise $5 million to fight the measure.

Opponents say this referendum is a dangerous attack on public education, that it isn't about choice but about tax subsidies for wealthy parents who can afford to send their children to private schools. A parent choosing a private school would get $2,600 a year toward tuition; if the kid stayed in public school, the school would get $5,200.

In 1991 California had 5 million children in public schools; 531,000 were receiving some form of private schooling, including 100,000 in home schooling. The proposed legislation would be of most benefit to the parochial schools, which have some 350,000 students.

Among the concerns voiced by critics is that the measure would siphon a billion dollars from public schools, that it would unconstitutionally channel tax dollars into religious schools, that foster schools run by

continued on following page

fringe groups more intent on political indoctrination than education would also benefit, and, equally important, that it would allow private schools to discriminate on the basis of physical or intellectual ability, leaving public schools to educate the most difficult and/or troubled students.

Coming to America

P.S. 19 in Corona, Queens (New York City) has a number of distinctions, one being that with more than 2,000 students (and operating at 135% of capacity) it is the largest elementary school in New York and possibly the country.

Situated in one of the most densely populated immigrant neighborhoods, it has students from 47 countries speaking 27 languages. Of the twelve kindergarten classes, only half are in English, and in a single classroom of 35, 15 nations were represented, speaking seven languages.

A traditional gateway to America, the school taught Italian immigrant children earlier in the century and Greek immigrants as recently as 1970. Only 42% of students read at grade level but most of them enter kindergarten not speaking any English. "By the end of the year," says Superintendent Dr. Barbara Miles, "they can converse in English."

The school also holds classes for parents, teaching them English and how to discipline their children without hitting them. Plans are in the works for bilingual classes other than Spanish – Chinese, Korean, Creole, even Urdu.

Trading Places

Frederick Winslow Taylor, industrial engineer and efficiency expert at the beginning of the century, believed in breaking work into small segments so workers did not need imagination or individual initiative. The result was a very authoritarian, top-down model.

Management consultant Robert Lynch has suggested that the American education system was similarly skewed, with emphasis on rote learning and doing things the "right way," and with little emphasis on how to use information critically.

W. Edwards Deming, an expert in statistical quality control, found his ideas rejected in the U.S. but welcomed by the Japanese. Starting in 1950, he spent the next 40 years teaching the Japanese how to produce consistently high-quality goods and services.

For the past ten years, American corporations have been desperately trying to learn what Deming knew, and there is increasing belief that the education system must also begin listening. Deming's 14 principles are based on his belief that workers (teachers) want to do their best, and it is management's (administration's) job to provide a system—and keep improving it—which makes this possible. "Don't fix blame, fix the system," is Deming's philosophy"

More Demingisms:

Ten of the 14 points which would appear to have application to an educational environment:

1) Create constancy of purpose for improvement of product and service.

3) Cease dependence on inspection to achieve quality. Build in quality in the first place.

5) Improve constantly and forever every process.

6) Institute training on the job.

7) Adopt and institute leadership.

9) Break down barriers between staff areas.

10) Eliminate slogans, exhortations, and targets for the staff.

12) Remove barriers that rob people of pride of workmanship.

13) Institute a vigorous program of education and self-improvement for everyone.

14) Put everybody in the organization to work to accomplish the transformation.

"Behind each truth is another truth"

Saichi Oono, long the head of manufacture at Toyota and a disciple of Henry Ford as well as Deming, believed a system could be fixed only if one understood that "Behind every truth is another truth" and that one must keep searching until there is "no further truth."

It has been observed that the American addiction for quick fixes and dramatic solutions is the result of acting on the first or second truth; thus, as fad follows fad, nothing ever really gets fixed. Further, since everyone clings desperately to his or her "perks," nothing will change until the whole system crashes.

Guide Books to Dollars

Whether done with tin cups or slick presentations, anyone looking for handouts should follow one cardinal rule: go where the money is. A series of guide books from Education Interface makes it easier for the educator seriously in search of freebies and deals and partners, particularly in the corporate world.

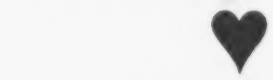
The four tomes – *Guide to Corporate Support*, *Guide to Voluntary Support*, *Guide to Government Support*, and *Guide to Foundation Support*, are indispensable to any educator who is looking for new sources of revenue or ways to acquire materials and resources. The four-volume set goes for $375, a hundred-dollar saving over buying them separately. Contact Education Interface, P. O. Box 3649, Princeton, New Jersey 08543-3649. Telephone 800 222-3863.

Hard Disk Increase Leads to Floppy Shortages

Believe it or not, a shortage of 3.5" disks is in the making and all because of the explosion in hard disks. The explanation: as computers get more and more hard-disk capacity, more and more back-up copies of hard-disk files are required. Five years ago, hard drives were considered an expensive add-on; now 40MBs are common and 100 or more not exceptional. Manufacturers predict the shortage will evaporate as they crank up capacity.

THE STATES CONSORTIUM FOR IMPROVING SOFTWARE SELECTION
SCISS
TESS
THE EDUCATIONAL SOFTWARE SELECTOR
UPDATE

Tex & TESS



Made for Each Other

Texas has this way of doing things big and for educators the rollout of TESS will add considerably to its reputation

For example: From the beginning, the Texas State Board of Education and its Software Advisory Committee have made TESS available to every one of the state's 6,300 public elementary and high schools; it is available as well as to all private schools, colleges, universities, and public libraries.

If a school doesn't have a computer with sufficient capacity for the full TESS database (35MB), then it can use the electronic "Latest and Best of TESS" (7MB); and if it lacks DOS or Mac platforms, the school can still use the print version of The *Latest and Best of TESS* (400+ pages).

A detailed user's manual accompanies each set of computer disks. In addition, training sessions are being set up at all 20 Education Service Centers.

Schools are being urged to use TESS to keep a record of software already purchased by the district, along with user comments, *pro* and *con*. This ability to keep track of existing software—and its evaluations—is a very useful feature of the database.

Texas is also putting TESS online on TENET, the Texas Education Network, the first Consortium member to do so. In the future, schools will be able to get TESS updates directly over TENET, saving considerable time and money. TENET also has a TESS bulletin board on which will be posted solutions to problems users may have encountered. Any TESS users will first check this board to see if the problem has already been answered. There will also be up-to-date information on TESS and The Latest and Best of TESS. Texas TESS users can ask questions and receive help through TENET.

Texas joined the Consortium only after a survey by the Texas State Board of Education Software Advisory Committee of all the various software selection and evaluation tools available. TESS, a product of EPIE Institute, was judged the best in scope, with more than 12,000 entries; in terms of the reviews it includes in the database, which are drawn from 41 different sources; in ease of access; and, of prime importance, because it is continually updated. Another factor that played a role in the selection of TESS by Texas was the opportunity to work with other states in the Consortium.

The Software Advisory Committee expects to develop some materials to assist in the implementation of TESS, and is asking Texas educators to let them know their individual needs, all further indications that Texas is doing things right.

All in all, the Texas launch has all the earmarks of a huge success. Certainly, the groundwork has been well laid and the execution has been highly professional. Other Consortium members and those who are about to join will benefit mightily from the total Texas approach.

For information about the States Consortium for Improving Software Selection (SCISS), call or write Pat Lutzky, Assistant Director, EPIE Institute, 103-3 West Montauk Highway, Hampton Bays, New York 11946. Telephone 516 728-9100, fax 516 728-9228. EPIE Institute, which created the TESS database, is a not-for-profit research organization which also manages the Consortium for its members. ❑

From Silicon to Moon Valley

Editor's note: Jane Motz called EPIE Institute from Phoenix to say that she had been frustrated beyond belief in her search for software; she had been told EPIE could help. She was happy to hear about The Educational Software Selector (TESS), the database that was created precisely for this situation. She was less happy to hear that the electronic TESS is available only through the States Consortium and that Arizona had not yet joined. EPIEGRAM got interested because her story is one which is being repeated tens of thousands of times across the country. At our suggestion, she sent us an audio tape on which she described her experience. Here are some of the highlights.

1) Jane Motz is a home economics teacher in her 26th year at the Moon Valley High School in Phoenix, Arizona. The school has 1,600 students, 96 teachers, and 20 administrators. Mrs. Motz has a theory that food, which is of interest to all teenagers, is a good starting point for learning many other subject areas. Food leads naturally to the study of customs, geography, history, cultural contributions – just about anything. The computer seems an ideal way to expand their views. Thus she is ready when....

continued on following page

2) Superintendent Jerry George announces that each teacher will get a computer and that everyone should strive to get technology used in the classroom. They are given a choice of Apple, Macintosh, or IBM-compatible PCs. After much cogitation, discussion, and vacillation, Motz chooses IBM, in large part because she is told that her students will benefit in the business world more from knowing IBM than Apple or Macintosh.

3) Even though her son is a computer wiz ("He only left the computer to come out to eat and get clean clothes and go to school"), and she had tried to learn years earlier when he was still home, she didn't. It isn't any easier when she gets her own computer at school because there is so little time. However, she perseveres.

4) She gets a grant ($28,000) to buy six computers, software, and peripherals, and finds making decisions a heavy responsibility. She spends enormous amounts of time reading about computers in education magazines, talking to any educator with some computer experience, going out into the community for non-educators' opinions about what graduates need to know, and, of course, talking to vendors and quickly finding out that salespeople sometimes say things which are not necessarily true.

5) She buys 386/33s plus CD-ROM plus Soundblaster. The first reaction of her students when told they will be getting computers is to groan. (Many of her class are slow learners, kids with problems, potential dropouts.) However, in a very short time, her students become so enthusiastic that they vie for the job of teacher's assistant so they can spend more time with a computer.

6) The choice of hardware is simple compared to choosing software. With no reliable central source of information (she did not know about TESS), and no one to talk to who has had her needs, she spends an enormous amount of time looking and searching for advice.

7) She comes to the conclusion that it is not quite fair for a teacher to be asked to make choices without access to proper information. It is very wasteful of her time (a cost), and bad choices too waste money. Moreover, it deprives her students, which are her first consideration. She can see already that some programs are not sufficiently challenging ("I want programs that challenge their minds, make them think, not just feedback like yes, no, or a, b, c choices.")

8) There are times when it all seems to be too much. ("At first I felt I was out in left field...but now I know I'm in the right field.") Her biggest frustration is having to make decisions without having enough dependable facts.

"Computers are wonderful, fantastic. They have their place and everyone is going to use them. But there were times when I hoped retirement would reach me first."

Editor's note: We checked Mrs. Motz just before going to press. The computers are up and running and having a big impact and her students are ecstatic. She has sent back $1,200 worth of software because it was misrepresented. The big news: her school is getting a Nabisco Grant. EPIE Institute is going to make certain her school gets access to TESS. Things are really going to take off next year, she tells us, and suggests we check back then. We will. Jane Motz is our kind of teacher. She doesn't make excuses, she makes a difference. ❑

School Out, Computer In

One in four students has a computer at home and summer provides a great opportunity. The trick is to get them away from Nintendo and TV long enough for them to realize how much more interesting learning is.

In line with the growing trend of emphasizing group learning, the computer in summer should also be shared. Parents and children together at the computer is as valid as parental reading in the early years. Kids who don't have a computer available can come over and help put out a newspaper; local museums and organizations offer workshops where they can upgrade their skills. And here is an excellent opportunity for remedial study in areas where the offspring need some help. Some discussion with teacher couldn't hurt.

News Service for SCISS

Beginning with the 1992-93 school season, the editors of EPIEGRAM will provide a quarterly news service for regional and state educational centers charged with the responsibility for distribution of TESS.

The objective is to minimize the amount of start-up time needed to launch TESS statewide once a state joins the Consortium. While the news service will be designed primarily for use in regional and state newsletters, it will also be used as a vehicle for sharing information, techniques, and success stories.

Texas First to Join Another Consortium

Texas, which leads the way in The States Consortium for Improving Software Selection (SCISS), is the first state to join another consortium, the Microelectronics and Computer Technology Corporation (MCC). The Austin-based consortium of advanced technology research groups was founded in 1982 to bring together world-class researchers and advanced-technology corporations. As a member, Texas will have access to innovations such as "Holostore," the use of crystals to store data and speed up access time, technology which has significant implications for state and local governments, including, presumably, education agencies. ❑

"Garbage in garbage out," said the Sage. He spoke of computers but might have meant the minds of children.

- Apophthegms of Dubayoo Ayef.

The Latest of TESS

Assorted Educational Programs

Earth to <In Common>

EARTH AND ENVIRONMENT INVESTIGATIONS: ROCK SEARCH
Focus Media
Science: Geology
Grades 7-12
In this simulation, students are asked to search for the legendary fossil of a giant trilobite. By planning expeditions, searching out and identifying rocks and fossils, answering questions, and following clues, students learn about the field of geology.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $99.

EARTH AND ENVIRONMENT INVESTIGATIONS: WEATHER ACADEMY
Focus Media
Science: Meteorology
Grades 5-10
In this role-playing simulation, students will be cast in the roles of "weather rookies" who must travel across the land learning how to control the weather. They will learn the factors involved in the formation of winds, high and low pressure areas, clouds, rain, and more.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $99.

EARTH AND ENVIRONMENT INVESTIGATIONS: POLLUTION CONTROL
Focus Media
Science: Ecology and Environment
Grades 7-12
As heads of the Pollution Patrol, students will be responsible for eliminating or controlling pollution and identifying the sources of the problems. Through a series of assignments, they will learn the causes and effects of pollution as well as the economic, business, and employment costs that
pollution creates.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $99.

EASY SEARCH: SOCIAL STUDIES: THE FIFTY STATES
Focus Media
Social Sciences: Geography
Grades 5-9
Involves using a database and role-playing. Students provide a geographical relocation service to clients looking for particular opportunities or environments in the U.S. They have access to a variety of information including population density, climate, economy, and racial makeup.
Apple II+/IIe/IIc/IIgs, $49.

EASY SEARCH: SOCIAL STUDIES: SIXTY COUNTRIES AROUND THE WORLD
Focus Media
Social Sciences: Geography
Grades 5-10
Allows students to bring countries with complementary or parallel needs together. Database provides facts such as regions of the world, population and growth rates, life expectancy, imports and exports, religions, and literacy rates.
Apple II+/IIe/IIc/IIgs, $49.

ECO-SAURUS
First Byte
Science: Ecology and Environment; Logic and Problem Solving
Grades Preschool-4
Students join Zug as an Environmental Conservation Official (E.C.O.) on a mission to save Eco Island and rescue M-Kar. By conserving energy and collecting recyclable materials from local inhabitants, students will restore Eco Island, rebuild M-Kar's spacecraft, and provide enough power fuel to his flight home.
Apple Macintosh 512E, Plus, SE, II, $49.95; IBM PC and compatibles, $39.95.

ECOSYSTEMS
Wings of Learning
Science: Ecology and Environment
Grades 4-8
Introduces students to elements of and relationships within ecosystems, with emphasis on food chains and webs. Provides students with an opportunity to examine the biology of ecosystems, the use of computers in scientific inquiry, and the impact of human activities on the environment. Part of the Voyage of the Mimi Series.
Apple II+/IIe/IIc/IIgs, $75; Apple Macintosh 512E, Plus, SE, II, $99.

ELECTRIC CIRCUITS
William K. Bradford Publishing Company
Industrial Arts: Electronics and Electricity; Science; Physics; Electricity and Magnetism
Grades 6-9
Students use on-screen batteries, circuitry, and other electric components to design and analyze parallel and series circuits in 25 different experiments, or they can design their own in open-ended experimentation. Analysis can include measurement of current using Ohm's Law.
Apple II+/IIe/IIc/IIgs, $80.

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ELECTRICITY: ELECTRONICS BASIC THEORY: 14 LESSONS
Shopware Educational Systems
Industrial Arts: Electronics and Electricity
Grades 9-College
Consists of various units which in turn contain separate lessons containing vocational content in a tutorial format followed by a quiz. Keeps records. Network version available. 18 diskettes.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $1120.

THE ELECTRONIC WHOLE EARTH CATALOG
Broderbund Software
Comprehensive: Generalized Tool Programs: Miscellaneous Tools
Grades 7-12
An encyclopedia of modern life, with over 3,500 entries on health, tools, crafts, work, communications, technology and computing. Students can explore topics as diverse as building a house, beekeeping, desktop publishing, art history, smithing, city restoration, and endangered wildlife. Requires CD-ROM player.
Apple Macintosh 512E, Plus, SE, II, $149.95.

ELEMENTS OF COMPUTER INTEGRATED MANUFACTURING
Shopware Educational Systems
Industrial Arts
Grades 6-College
Covers the basic structure of manufacturing and how each area is dependent on the others. Also examined is how computer technology can make a manufacturing facility more efficient and productive. Keeps records. Network version available.
Apple II+/IIe/IIc and compatibles, IBM PC and compatibles, $89.95.

EXAMWORKS
Tyson Educational Systems
Comprehensive: Drill and Test Generators
Grades K-College
Test generating program which includes true/false, multiple choice, and fill-in-the-blank. Test data selected and combined in any form desired. Menu driven. Tutorial included. Copy protected.
Apple II+/IIe/IIc/IIgs.

EXPLORE AUSTRALIA
William K. Bradford Publishing Company
Social Sciences: Geography; History; English and Language Arts; Basic Skills; Composition and Writing
Grades 4-6
An interactive exploration of the geography and history of the Australian continent. Students can change the scenes by moving characters and objects, or even add to those scenes from the supply of additional animated people or animals. They can write new text for each scene and then print out their own full-color stories. Part of the Explore-A-Series. Network version available.
Apple II+/IIe/IIc/IIgs, $99.

EXPLORING SCIENCE: TEMPERATURE
Sunburst Communications
Science: Physics; Heat
Grades 6-12
Classroom experimentation program: students use up to three thermistors simultaneously to monitor temperatures ranging from -20°C to 120°C in .1 Molar solutions. The computer records the information in any one of four different display modes, including time vs. temperature line graphs and a large digital display.
Apple II+/IIe/IIc and compatibles, $99.

A FIELD TRIP INTO THE SEA
Wings of Learning
Science: Ecology and Environment; Oceanography
Grades 2-8
Introduces students to magnificence and diversity of kelp forest and rocky shore habitat. Based on California's Monterey Bay. Each scene shows many different plants and animals, their habitats, interactions, and life cycles. At any time, students can get detailed information about more than 50 species by using interactive Data Table or Field Guide. Network version available.
Apple II+/IIe/IIc/IIgs, Apple Macintosh 512E, Plus, SE, II.

A FIELD TRIP TO THE RAINFOREST
Wings of Learning
Science: Ecology and Environment
Grades 2-8
An open-ended opportunity for students to discover and explore environment of Central-American rainforest. Detailed graphics show more than 70 animals and plants in their ecosystems. Data Tables let students search and sort among vertebrates, invertebrates, and plants. Students may also connect to a Field Guide filled with information about selected animal or plant. Network version available.
Apple II+/IIe/IIc/IIgs, Apple Macintosh 512E, Plus, SE, II.

FILEMAKER II
Claris
Comprehensive: Generalized Tool Programs; Database Managers
Grades 5-College
Database manager allows automatic indexing; easy-to-use scripts; search by range, greater than, less than, exact match, and prefix matching; multiple search and sort formats; field types for text, number, date, picture, calculation, and summary data; and more.
Apple Macintosh 512E, Plus, SE, II.

FIRST "R" - KINDERGARTEN
Milliken Publishing Company
Reading: Reading Readiness
Grade K
A phonetically-based word-recognition program with strong emphasis on comprehension. Covers the alphabet, initial sounds and final sounds. Students learn words through the standard methods of phonetics and use them immediatly in sentences and stories.
Apple II+/IIe/IIc/IIgs, $95

FIRST "R" - GRADE 1
Milliken Publishing Company
Reading: Reading Readiness
Grade 1
A phonetically-based word-recognition program with strong emphasis on comprehension. Students learn words through the standard methods of phonetics and use them immediately in sentences and stories. Covers individual vowels, double vowels, and ending blends.
Apple II+/IIe/IIc/IIgs, $285.

FIRST "R" - GRADE 2
Milliken Publishing Company
Reading: Reading Readiness
Grade 2
A phonetically-based word-recognition program with strong emphasis on comprehension. Students learn words through the standard methods of phonetics and use them immediately in sentences and stories. Covers vowels, silent letters, digraphs, multiple syllables, and endings.
Apple II+/IIe/IIc/IIgs, $205.

FIRST "R" - GRADE 3
Milliken Publishing Company
Reading: Comprehension Skills
Grade 3
A phonetically-based word-recognition program with strong emphasis on comprehension. Students learn words through the standard methods of phonetics and use them immediately in sentenses and stories. Covers: main idea, sequencing, drawing conclusions, cause and effect, and details. Part of the First
Apple II+/IIe/IIc/IIgs, $135.

FIRST-START MICRO READING LABS
Troll Associates
Reading: Reading Readiness
Grades K-2
Contains colorful 32 page hardcover book, matching read-along audio cassette, micro software program disk with learning activities that are keyed to the book, and a user's guide. Average lesson 10 minutes. Copy protected. Network version available.
Apple II+/IIe/IIc/IIgs, $39.95.

FIRST STEPS TO COMPREHENSION
Educational Publishing Concepts
Reading: Comprehension Skills
Grades 1-3
Provides a setting where students can practice and improve their comprehension skills while, at the same time, gaining experience with specific vocabulary. Coordinated set of exercises using Houghton Mifflin word list. Keeps records. Copy protected. Network version available.
Apple II+/IIe/IIc/IIgs, $159.90.

FORMULA VISION
K-12 MicroMedia Publishing
Comprehensive: Generalized Tool Programs; Spreadsheets
Grades 7-10
A simple, powerful beginner's spreadsheet. Has a small 15-cell structure for solving a variety of word problems. Contains 25 help screens.
Apple II+/IIe/IIc/IIgs, $29.95.

FRENCH QUIZ MASTER
J. Weston Walch, Publisher
Foreign Language: French
Grades 6-12
Quiz game where students select from 5 categories of questions with a choice of difficulty and point value. Correct answers add to score, incorrect answers subtract from score. Categories include verb antonyms, place names, foods, slang, music, holidays, authors, proverbs and more. Reinforces understanding of vocabulary and sentence structure.
Apple II+/IIe/IIc and compatibles, $39.95.

GALLEONS OF GLORY: THE SECRET VOYAGE OF MAGELLAN
Broderbund Software
Social Sciences: History; World History; Geography
Grades 4-12
Gives students a feel for this forgotten world by recreating the first part of Magellan's historical voyage. Students take on the role of Magellan, and pit their leadership skills against nature and shipboard politics as they react to changing circumstances and conditions that arise during the voyage.
IBM PC and compatibles, $59.95.

THE GARDEN SERIES 1
Focus Media
Early Learning and Preschool
Grades Preschool-2
Introduces children to a nature and science curriculum. Includes the following subjects: Trees and seasons, gardening tools, parts of a flower, and making new plants.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $249.

THE GARDEN SERIES 2
Focus Media
Early Learning and Preschool
Grades Preschool-2
Introduces children to a nature and science curriculum. Includes the following subjects: Rain, snow, and ice; gardening step-by-step; growing a bean seed; gathering vegetables; and flowers and leaves.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $249.

GOOFY'S RAILWAY EXPRESS
Walt Disney Educational Media
Early Learning and Preschool
Grades Presch-K
Exercises geometric shape and color recognition. Students ride along with Goofy and Mickey as they explore a picturesque contryside full of colored geometric shapes that transform into enchanting objects with the toot of the train whistle.
IBM PC and compatibles, Commodore 64/128, $14.95.

GRADEBUSTERS: MAKING THE GRADE
J. Klein/GradeBusters Corporation
Comprehensive: Class Management Aids; Grades and Recordkeeping; Administrative Software; Student Records; Multi-Function Programs
Grades K-12
A teacher gradebook for grades and attendance. Edits, prints reports, and supports the popular data-testing systems for multiple-choice score entry.
Apple Macintosh 512E, Plus, SE, II, $99.95.

THE GREAT KNOWLEDGE RACE: QUIZ WHIZ
Focus Media
Comprehensive: Games; General-Purpose
Grades 8-12
Designed to provide a motivating method of learning and reinforcement for students as they challenge themselves and each other. The categories of information are geography, history, science, literature, sports, and movies.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, Commodore 64/128, $85.

THE GREENHOUSE EFFECT
Full Circle Media
Science: Ecology and Environment
Grades 6-12
Students explore greenhouse causes and effects, and alternate energy sources. Students learn how to reduce this global threat. Requires MindMap by Full Circle Media with videodisc and CD-ROM support.
Apple Macintosh 512E, Plus, SE, II, $80.

GRIZZLY BEARS
Top Ten Software
Science: Ecology and Environment
Grades 4-12
Four simulations that help students search for solutions to the problems threatening these largest land carnivores with extinction. By experiencing life as a park ranger, research biologist, and natural-resource developer, users search for creative solutions to conflicts between man and bear.
Apple IIe/IIc, $49.95; Apple II+/IIgs, $59.95; IBM PC and compatibles, $159.95.

HEADLINE HARRY AND THE GREAT PAPER RACE
Davidson and Associates
Social Sciences: History; United States History; Geography
Grades 5-10
As Harry's ace reporter, the student has a job: to outsmart the competition, uncover true news stories, and get them on the front page first. Each new assignment will enrich user's knowledge of U.S. history and geography in uncovering news events spanning four decades of American history (1950-1990).
IBM PC and compatibles, $49.95.

THE HEART AND RESPIRATORY SYSTEM
Troll Associates
Science: Anatomy and Physiology; Reading; Vocabulary
Grades 4-8
Focuses on the heart, the blood, and the major organs of the circulatory and respiratory systems. Average lesson 10 minutes. Copy protected. Network version available.
Apple II+/IIe/IIc/IIgs, $39.95.

HOLIDAY FUN!
Focus Media
Early Learning and Preschool
Grades Preschool-2
Introduces children to the social and cultural aspects of various holidays, with a special focus on Christmas.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $99.

HOMEFILER
Word Associates
Comprehensive: Generalized Tool Programs Database Managers
Grades 7-12
Simplified database for first-time users and/or students. Streamlined menus and help screens to manage information quickly and easily. Instructions and numerous screen prompts help user to store and sort data and to print reports. Introduction to database concepts and organization and manipulation of information. On-screen tutorial. Copy protected.
Apple II+/IIe/IIc and compatibles, $39.95.

HUMAN SEXUALITY
Learning Multi-Systems
Health: Sexuality; Guidance Counseling
Grades 6-12
Helps teens consider sexuality in relation to values, relationships, communication, and decision-making. Answers questions about everything from birth control and pregnancy to sexually transmitted diseases. Part of the Body Awareness Resource Network (BARN).
Apple II+/IIe/IIc/IIgs, $120.

HYPERSCREEN 2.0
Scholastic
Comprehensive: Generalized Tool Programs; Publishing and Printing Tools
Grades 4-12
User builds presentations screen by screen with graphic backgrounds, fonts, sounds, clip art, and drawing tools. Each screen can be linked by up to 15 "hot spots" chosen to perform a range of actions, such as playing music, opening a window of text, reading text aloud, or branching from screen to screen. Network version available.
Apple II+/IIe/IIc/IIgs, IBM PC and compatibles, $99.95.

IBM GRAPHICS MADE EASY
J. Weston Walch, Publisher
Computers: Computer Programming; BASIC
Grades 6-12
Students learn programming skills by using graphic designs, sound effects, and animation. Contains demonstration programs and accompanying book provides step-by-step lessons from writing a first program to creating animation.
IBM PC and compatibles, $54.95.

IBM READING FOR MEANING LEVELS I, II, III, IV
IBM
Reading: Comprehension Skills
Grades 3-4
Leads students through a variety of instructions designed to make them think about what they read. Helps teach information classification, develop contextual-analysis skills, and increase comprehension of word connotations.
IBM PC and compatibles, IBM PCjr, $137 for each level.

<IN COMMON> GEOGRAPHY
Sunburst Communications
Social Sciences: Geography
Grades 6-12
Students have an opportunity to infer that "Boston," "Denver," "Austin," and "Sacramento" belong to a common class, as do "Nile," "Rhine," "Rio Grande," and "Amazon." Data files enable students to learn more about U.S. geography as well as mountains, islands, cities, and countries around the world.
IBM PC and compatibles, Tandy 1000/1200, $65.

<IN COMMON> PEOPLE, PLACES AND THINGS
Sunburst Communications
Comprehensive: Games, General-Purpose
Grades 4-7
Students exercise their ability to infer that "Roosevelt," "Lincoln," "Jackson," and "Monroe" can be grouped together, as can "Bolivia," "Paraguay," "Ecuador," and "Brazil." Other data files deal with sports figures; land, sea, and flying animals; Roman numerals; animal, vegetable, and mineral classification; and the sizes of things.
IBM PC and compatibles, Tandy 1000/1200, $65. ❑

TESS and SCISS continued from front page

probably be out of desperation rather than a reasoned analysis of the alternative programs available.

Q: You're saying it is a wasteful process?

A: Indeed it is and in every way – it wastes the teacher's time and that of the media specialist. If it's the wrong program, as is all too frequently the case, it wastes money; also, it wastes that initial enthusiasm a teacher brings, something which can be very fragile. And it waste all kinds of opportunities, the worst being the waste of the students' potential.

A: Aren't there people in the business she can ask?

Q: Sure, sales representatives of software companies. The question will be something like: "Do you have a really good program for fifth-grade math that puts emphasis on fractions and decimals?" What's the sales person going to say...that someone else's is better? Or that his program didn't get very good reviews? That's not what they teach in sales school.

Q: And you're saying TESS would solve the problem.

A: Absolutely! Tess has information on more than 11,000 software programs – as near to 100% of what's on the market as we have been able to make it. And it is electronically searchable in minutes – not weeks and months. And the teacher or media person will see *all* the programs available and can judge which is closest to her needs. Also, if the program has been reviewed—and we have 41 review sources—this, too, will be noted.

Q: Are all educational programs reviewed?

A: No, and that's another sad story. Only about 5,000 programs have ever been reviewed by all of the forty-plus review sources monitored and referenced in TESS. Naturally, the programs from the larger producers tend to get reviewed, which leads to some programs getting multiple reviews and many getting none at all. We are convinced there are hundreds of good programs out there that haven't been reviewed by anybody. One of the things we hope the Consortium can do is to help stimulate more reviews.

Q: The Consortium is over a year old – how many states have joined?

A: Five – Georgia, Indiana, Michigan, New York, and Texas. Also, Apple Computer joined as a corporate, non-voting, non-policy-making member, and IBM has indicated that it may follow suit.

Q: Why aren't there more? Having TESS available would seem to be something educators would kill for.

A: Well, there are another 12 or 15 states where there are people who want the state to join, but it isn't that simple. In the beginning, we naïvely thought educators would hear about TESS and come running; but it just isn't so. The problem is inherent in the system, I guess. It would help if we could launch a big marketing campaign but, being not-for-profit, we don't have that kind of money, and in this time of tight money many states are having difficulty coming up with the first-year membership fee. But the problem goes deeper than that.

Q: Which is?

A: Many administrators don't see giving teachers the freedom and wherewithal to select software as a top priority. In addition, the state membership usually is expected to come through the state department of education, which has its own agendas which also seem more immediate and important. And then there's budget. If they don't know about TESS or don't understand how essential TESS is to school reform, you can be sure it's not in the budget. For all these reasons, it can take a long time. Texas did it right but in almost every other state, first-year funding did not come from through the State Department of Education. In Michigan, it was the Mott Foundation; in Indiana, Purdue University and the state's nine regional service centers put up the initial funding; in New York, it was a network of regional BOCES.

Q: Does this mean someone who wants and needs TESS has to do without until the state joins?

A: Well, we have the print version *The Latest and Best of TESS*, which has some 2,500 entries on, as the name implies, the latest and best. Because it's published annually it's not as up to date as the every-six-months update of the electronic version of TESS. So the Consortium members decided to let an individual school or district in a non-Consortium state lease a copy of electronic TESS for $500, plus $150 for the six-months update. Use is strictly limited to that building and, unlike in a Consortium state, the disk cannot be copied or networked.

Q: Are these stand-alones helping convince new states to join?

A: That's the hope and it seems to be turning out that way. The only way one can truly appreciate the speed and ease of finding software with TESS is to try it out. These stand-alone versions are very good at demonstrating this fact.

Q: Let me get back to this first-year fee. Do you expect states to pay it or are you suggesting alternative methods?

A: Well, the best of all situations is what has happened in Texas. The state paid the fee and the state got behind the distribution of the database. They're putting it in every one of their 6,300 schools, either on disk or online. This is the ideal. It brings the cost of the database, per school, to under $4.00. A school spends more than that on paper clips – and here is a database that will save a school lots of dollars and improve instruction.

Q: I still can't see why it is so difficult to get educators to understand the validity of a database such as TESS.

A: It's not difficult to find enthusiastic educators – the difficulty is in the mechanism by which something as radically new as this gets bought and moved into the schools. It takes some dedicated, action-oriented people. Doers. But to answer your question, we encourage TESS supporters to look for private sponsors for the first year. It is one of the best ways a corporation or a foundation can help schools to help teachers to reform and improve instruction.

Q: Why is that?

A: Because reform of instruction has to build from the easy availability of information. I don't think schools can improve unless it starts at the teacher level and moves up. Schools are not going to be reformed from the top down – and the billions of dollars spent on education reform in the last 10 years without any perceivable improvement in learning outcomes proves, I'm sorry to say, my point. Make no mistake, TESS and the Consortium have made enormous strides in a very short time. It's just that after 25 years of working to provide teachers with the very best tools, you can imagine I'm a bit impatient.

Q: What of the future?

A: Well, we have at least 12 states where all we need is to help the TESS enthusiasts find the funding. And we're working on that right now.

Q: What should an educator do who wants access to TESS?

A: Cali us! We may be well advanced in negotiations with the state they are in. Even if we aren't, we may have an angle or two – we usually do. And, of course, there is always the standalone option...and the print version of *The Latest and Best of TESS*. [$49.95 plus $5 shipping and handling from Sterling Harbor Press.] Also, a local educator may have contacts with local foundations or corporations that can be brought into play. As I may have mentioned, the people at Genesee Intermediate School District in Michigan got the Mott Foundation to underwrite TESS, and any day now we expect another foundation to support the Consortium in a large midwestern city. *continued on following page*

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Q: One last question – if you had your wishes come true, what one wish would you like to see happen?

A: I have a belief that access to information is the first and most important step to helping teachers to change education where it matters: in the classroom. My fondest wish is that every teacher, every administrator, every parent, every student—in a word, anyone who has anything to do with the education of our young—and that includes software designers and publishers, incidentally—should have access to all research information. Certainly, nationwide access to TESS would save millions of dollars and educate millions of students better. But it is bigger than that. We have another database, IIIR, which can help teachers to integrate and align their use of all learning materials with a school's intended learning outcomes. This is another absolutely essential area of information which very few educators even think about, much less attempt to do anything about. As I wrote recently in my column in EPIEGRAM, one of education's dirty little secrets—and not so little, now that I think about it—is that educational materials rarely if ever align with the curriculum. Often they are out by as much as 50%.

Q: Don't educators know this?

A: Many of them know it intuitively, but they don't know it with precision, nor do they have the information tools for correcting it. If textbooks are chosen at the state or district level – what can the teacher do? If textbook publishers say their texts are 90 or 95% in alignment with a school's curriculum, who is there that can say that only 50% of the book really aligns with what kids are supposed to be learning? Unfortunately, the schools that need us most to help them with this kind of precise information are the least likely to contract for these services. But this is a different subject. Let me return to the question. If everyone connected with education has access to the right information, and this includes individual assessment, school reform will begin to be possible.

Q: Is it going to happen?

A: I believe it is very difficult for an organization to reform itself. Not much will happen of a substantive nature until the educational establishment is forced by outside pressures to reform. I think that is beginning to happen. But if teachers get this message, and are given the information they need to act on it, reform could begin to occur from within the schools as well. ❑

Tech Notes

If you suffer from....

First Kid on the Block Syndrome....

☛ Look into a new product from Vocaltec of Northvale, New Jersey, called the CAT (compact audio technology), a flexible audio device for PCs and compatibles which a) produces high-quality sound; b) records files in one-third the space; c) costs but $179. The CAT is probably not for the beginner but its accomplishments appear impressive; useful for anyone moving into multimedia who wants state-of-the-art sound quality yet has limited capacity.

☛ Watch for tiny computers with tiny modems and tiny radio transceivers, all becoming possible because of tiny hard disks. Ministor Peripherals Corporation (San Jose, California) has introduced a 1.8" minidrive that is anything but tiny in capacity. Capable of storing 65MB (the equivalent of 32,000 pages, double-spaced), the Ministor is noted for low power consumption and fast "spin-up" time, and is rugged enough to take a fall on a concrete floor and keep whirring.

☛ Hand-held computers in the works from Tandy-Casio and Apple-Sharp teams for 1993. The theory behind the new gizmos: some people need access to information wherever they go.

☛ Also from Apple, a new product called "Newton," (announced with a show of gravity), a pen-based computer which is said to be able to send faxes, dial phones, keep an appointment calendar, and perform other mundane but necessary chores. Doesn't make coffee.

☛ New products and new marketing from DAK Industries, which has been trying to get everyone to buy CD-ROM (below $300 with software) and is now giving away a 386 desktop computer when you buy $1,499 of bundled software worth, DAK says, over $3,000.

☛ Help for those who deal in words. Dictionary: American Heritage Dictionary for Windows (116,000 definitions); Thesaurus: Roget's II Electronic Thesaurus (500,000 synonym choices for 42,000 words; Foreign Language: Lexica (WordStar), five dictionaries, for English, German, French, Dutch and Spanish, with 50,000 words each with split-screen aids in translations; Quotations: Quotemaster Plus from PennComp, some 3,000 quotations, includes humor.

☛ Distant Learning List from National Distance Learning Center in Owensboro, Kentucky, has cataloged all current programing available through distant-learning programming producers.

☛ MacWrite II, for Mac Classic and PowerBook, now aggressively priced at $120 off list (Claris, Santa Clara, California). Also, free upgrade to MacWrite Pro with 130 productivity improvements, including desktop publishing, for all who purchased MacWrite II between April 1, 1991 and January 31, 1992.

☛ PageMaker (Aldus, Seattle, Washington) continues toward greater sophistication as third-party developers add their creativity. Nine companies have announced or shipped additions to PageMaker Version 4.2, including the ability for voice commands to execute any function (Voice Navigator II).

☛ MAC-IN-DOS is not a misprint but a program which allows DOS computers to read Macintosh files directly off a 1.44MB floppy disk, particularly useful for instructors or students who work at one platform at school and need to continue work on another at home. Pacific Microelectronics, Mountain View, California. Telephone 415 948-6200.

☛ Teachers who want to build word skills and appreciation by making their own crossword puzzles should consider CrossMaster, a program which automatically builds puzzles when given a set of words and clues. Mac compatible. Focus Development, Fargo, North Dakota 58107. Telephone 701 281-1754.

☛ LinkWay Live! from IBM, the newest member of the LinkWay clan, supports both analog and digital full-motion video. LinkWay Live!, which has network licensing bundled, is designed to utilize the powers of IBM's newest machines, PS/2 25 SX for education and the Ultimedia Model 57 SLC for multimedia. Eduquest, Division of IBM, Atlanta, Georgia. Telephone 800 426-9402.

☛ Insight (grades 7 to 12) helps young people to figure out their career qualifications (Assess Module); what they are interested in (Explore Module, with almost 800 job titles and descriptions); and compare (Planning Module) who they are to what they want to be. Apple II, Macintosh, MS-DOS. $195 single user; $895 building/network license. From Bytes of Learning, Toronto, Canada. Telephone 416 495-9913. ❑

Research & Reports

Channel One Gets Failing Grade. According to first-year report of a planned three-year study, Channel One classroom television did not significantly increase student knowledge of current events.

The controversial ad-supported news program is now used in more than 10,000 schools. Schools are loaned monitors and other video equipment if they agree to show Channel One to most students on a daily basis. Students and teachers generally liked the 12-minute show but researchers indicate the program is rarely integrated into the curriculum.

No research was available on how well the high-school students retained information from the advertising.

For more info: Institute for Social Research, University of Michigan, Ann Arbor, Michigan 48106. Telephone 313 763-5325. Summaries are free; full report is $10 prepaid.

§

Sound Bites on TV as Teacher. Parents use television for entertainment; children use it to find out about the world (Dr. John Condry, Cornell University). Television provides a lot of information, but much of it is false, both in programs and in commercials.

According to Dr. Jerome Singer, author of *Use TV to Your Child's Advantage* (Acropolis Press, $9.95), kids learn a great deal from television, much of it unfortunate (e.g., how to break into cars, to fight, to lust for merchandise). Watching new programs with your child is one of his many suggestions; and don't hesitate to turn off a program that is objectionable.

§

Smoking Gun. According to the National Center for Health Statistics, pregnant women who smoke are more likely to deliver low-weight babies than are non-smokers. Low birthweight has a direct bearing on infant mortality and has been linked to other severe disabilities such as cerebral palsy and metal retardation.

According to the report, 20% of mothers in 1989 smoked; those who were heavy smokers (two packs a day) were 2½ times more likely to have undersized children.

§

Broderbund Lowers Apple II Fees. Schools with fewer than 35 Apple II computers can benefit from a new reduced site-licensing plan from Broderbund for some of its most popular programs (Tree House, the Carmen Sandiego series, Print Shop, Dazzle Draw, etc.). One-time fees range from $295 to $395 and when two or more schools in the same district purchase site licenses at the same time they can save an additional 10% to 30%. Call 800 521-6263 for more info.

> (*And don't forget the best source of all for information on software, The Latest and Best of TESS, only $49.95 plus $5 S&H from Sterling Harbor Press.*)

§

Catchy Title, Catchy Tunes. "MetroGnomes Music," the newest from The Learning Company, for ages 4-7, promises its medley of five musical activities will teach any child "to speak the language of music." IBM/Tandy, $49.95. For review copy call 800 852-2255.

§

Top Seller Improved. The number one best-selling CD-ROM, the Grolier Encyclopedia, has added new features, including video and animation, and will now be known as the "New Grolier Multimedia Encyclopedia." It has already won the CD-ROM Product of the Year award from the Optical Publishing Association.

Among its features: digitized video in both MS-DOS and Macintosh versions, new animation (weather, human body, solar system), a Timeline stroll through history, networking capability for Macintosh (IBM version is already available), more than 7,000 new or updated articles, and more than 3,000 illustrations, 1,000 of them new. $395 list. Telephone 800 356-5590.

§

Brain Drain. Experts increasingly believe that if brains of very young children are not properly stimulated in the early years, their capacity to think may be irrevocably limited. The theory is that in the first few years of a child's life, the brain responds to stimuli by laying down mental pathways which will serve as foundations for verbal processing and thinking skills.

The villain: television. And that includes *Sesame Street*, which sometimes seems deliberately devised to develop as short an attention span as possible. Moreover, by its very nature, television reinforces passive rather than active responses. Children don't gain verbal or problem-solving abilities.

Another problem: working mothers are gone when their children would benefit most from interrelating. Often the children are left with caregivers who may be deficient in English, compounding the problem. With television used as a baby-sitter, the problem is compounded further.

For more: *Endangered Minds* by Jane M. Healy, Ph.D., $11, Simon & Schuster/Touchstone, 1230 Avenue of the Americas, New York, New York 10020. By the same author: *Your Child's Growing Mind*, $9.95, Doubleday, 666 Fifth Avenue, New York, New York 10103.

§

Yo, Word, Man. In *Carnival Culture: The Trashing of Taste in America*, by John B. Twitchell (Columbia University Press, $24.95), we read that in 1945 the average number of words in the written vocabulary of 6- to 14-year-old students was 25,000, and that the average today is 10,000. But, anyhow, like, even if you wrote a letter to Gilligan, he wouldn't get it, because, like, you know, he's on like an uncharted island, you know? ❑

STATS

Honey, We've Shrunk the Family. Only 34% of households in 1991 had at least one member under age 18; this compares with 45% in 1970. The largest decrease of such households occurred in the 1970s, when the average fell by 12.1%; now the decline seems to have slowed, at least temporarily, to only 4.7%. The average family in 1991 consists of 2.63 persons. Families of five or more persons are only 10.5% of all households, about half the percentage in 1970.

– "Household and Family Characteristics," G.P.O. stock number 803-005-00059-1, $11 from Super. of Documents, U.S. Gov. Print. Off., Washington, D.C. 20402. $11.

Family Incomes Also Shrink. Between 1973 and 1990, the median annual number of persons under 30 who were heads of families with children fell by 32% and the child-poverty rate doubled, from 20% to 40%.

For older families, the median income dropped 6%; for families without children, median income rose by 11%. Child-poverty rates have risen dramatically for young black and Latino families (68% and 51%). Poverty rates for young families headed by a single female also climbed (77%) as did those for high-school dropouts (64%).

These statistics from the Children Defense Fund have been termed "frightening" by Marian Wright Edelman, President of C.D.F.

The complete report, "Vanishing Dreams: The Economic Plight of America's Young Families," is available for $6.50 from the Children's Defense Fund, 122 C Street N.W., Washington, D.C. 20001.

Sometimes One Half Equals One Third. According to a recent study, the per-pupil cost in Catholic elementary schools for the 1990-91 school year was $1,819, slightly less than 35% that of the $5,208 average for public schools. One clue to the disparity: teachers in Catholic elementary schools earn an average of $17,597, only half of the national average for all elementary-school teachers.

New Rape Statistics Surprise Experts. From "Rape in America: A Report to the Nation" from National Victim Center, financed by National Institute of Drug Abuse, research conducted by Crime Victims Research and Treatment Center at Medical University of South Carolina:

- 60% of all rape victims are under 18;
- 32% are in 11 to 17-year-old age group;
- 29% are less than 11 years old;
- 6% are older than 29;
- 700,000 (estimated) forcible rapes annually; but FBI and Department of Justice say it is only 100,000 to 130,000;
- 88% of victims knew their attacker;
- One-third contemplated suicide;
- 13% tried to kill themselves;
- 31% developed post-traumatic stress disorder.

Recommendations: Education on rape should begin in elementary school with emphasis on reporting rapes to teachers, trusted adults or crisis-consulting agencies.

Less English Spoken Here. The percentage of U.S. residents who speak a language other than English at home has grown remarkably, according to data from the 1990 U.S. Census. Some samplings:

Montana	5%
Vermont	6%
Massachusetts	15%
Florida	17%
New Jersey	20%
New York State	23%
New Mexico	35%
New York City	41%
Miami	75%

Major concern for educators: teachers may often be unaware that English is not the language spoken in the student's home.

Teenagers Own Worst Enemies. Of 28 million adolescents between ages 10 and 18, as many as 25% (7 million) are at serious risk of being harmed by health- or life-threatening activity – so says the Carnegie Council on Adolescent Development, which adds that even students who appear to be basically healthy are at some risk because of a lack of "sufficient problem-solving skills."

High-risk behavior includes: alcohol and drug use, premature sexual activity without using condoms, gang membership.

Copies of the report available free from Carnegie Council on Adolescent Development, P. O. Box 753, Waldorf, Maryland 20604.

Peace Dividend Not for Teachers. The Department of Defense has announced it is closing nearly 10% of schools in Germany and reducing staff in others. The DOD has some 250 overseas schools in 19 countries, serving more than 130,000 military-related dependents.

Economy Down, Teachers and Students Up. Public school population increased 638,000 in 1991-92 to a total of 41.8 million, according to statistics from the National Education Association.

Meanwhile, average salary for teachers increased 4.4% despite the economic downturn experienced by most of the nation. This was, however, the smallest increase in 10 years. Average salaries vary from a high of $47,300 in Connecticut to a low of $23,300 in South Dakota, where there is not a single EPIEGRAM subscriber.

The Federal contribution to school spending is 6.2%. ❑

Gleanings

A Higher High School. "Today we don't offer, for the most part, anything more in four years of high school than we used to offer in two years. We waste some of the most creative years of adolescents' lives in nonsense."

– John Silber, President, Boston University, upon announcement of a new private high school to open in the fall of 1993 that will require students to complete their first year of college coursework during their senior year.

¶

More on Cynicism. "[S]elf-interest can take us only so far. At a certain point, human nature rejects it as an end, requiring something higher and finer. We can tell our children to just say no from now until doomsday; eventually they will require something to say yes to. If we cannot furnish them with a cause beyond the realization of their individual desires, all our past success may be rendered meaningless."

– Robert Stone, in the New York *Times*.

¶

A Paige to Reread. As with many of the classics, the sayings of the great philosopher, Satchel Paige, should be referred to at least once a year. In an age of cholesterol, stress syndromes, chronic fatigue syndrome, and other lifestyle ills, Paige's six points to promote health and longevity take on even greater relevance:

1) Avoid fried foods, which angry up the blood.

2) If your stomach disputes you, lie down and pacify it with cool thoughts.

3) Keep the juices flowing by jangling around gently as you move.

4) Go very light on the vices, such as carrying on in society. The social ramble ain't restful.

5) Avoid running at all times.

6) Don't look back; something might be gaining on you.

¶

Schlesinger on Ethnocentricity. "Like any other excluded groups before them, black Americans invoke supposed past glories to compensate for real past and present injustices. Because their exclusion has been more tragic and terrible than that of white immigrants, their quest for self-affirmation is more intense and passionate....

"[H]istory as a weapon is an abuse of history. The high purpose of history is not the presentation of self nor the vindication of identity but the recognition of complexity and the search for knowledge."

– Arthur Schlesinger, Jr., *The Disuniting of America*, $14.95, W.W. Norton & Co., 500 Fifth Avenue, New York, New York 10110.

¶

"Established scholars worry lest lessons be turned into ethnic cheerleading, laced with indictments of Europe's culpability for slavery, colonization, and the decimation of native populations.

"Certainly, schools at all levels can and should be doing more about teaching black history. ... [A]s one scholar put it, youngsters 'do better academically when they see themselves in the curriculum.'"

- Andrew Hacker, *Two Nations, Black and White, Separate, Hostile, Unequal*, $22.95, Charles Scribner's Sons, 866 Third Avenue, New York, New York 10022.

¶

The New Literacy. From an editorial by William E. Clark, President and CEO of Optical Data Corporation, in which he notes that if educators first choose student outcomes, the choice of educational materials becomes much simpler. There is, he notes, a need for a "new literacy:"

"This New Literacy is more than simple proficiency in reading, writing and computing. It is the ability to develop insights from visual, verbal, tactile and integrated data and apply them successfully to the personal and professional challenges of life in our modern society (10-20 years from now)."

Noting that as pressure for solutions and results increase, so will confusion about choices, Mr. Clark writes: "Educators must develop and use tools* to help them define issues, make effective decisions, insulate their decisions from crafty selling, and get down to developing a new standard of literacy for our children."

¶

On Tests and Testing. "Typical tests, even demanding ones, tend to overassess student 'knowledge' and underassess student 'know-how with knowledge' – that is, intellectual performance.

"The test may be a contrivance but it needn't *feel* like one.

"Design performances, not drills. A test of many items (a drill) is not a test of knowledge in use.

"Good teaching is inseparable from good assessing."

– "Creating Tests Worth Taking," by Grant Wiggins, in May issue of *Educational Leadership* (ASCD).

¶

Doomed. George Leonard, in the May *Harper's*, says that the school as we know it is doomed; that from the beginning it was merely an administrative expedient, a crude effort to adapt the tutor-learner relationship to mass education. We were able to get away with it for so long only because our society required few academically or technically educated citizens. He recommends team and cooperative teaching, the end of lockstep teaching (forcing all to learn at the same rate), and the use of educational technology. Look at education from the *learner's* point of view, he urges. ❑

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* One of the best tools for finding the appropriate software is TESS, from EPIE Institute.

"Truly the teacher is worthy of honor, if only he give greater heed to his pupil than his pension"

- Apophthegms of Dubayee Apf.

Director's Column continued from front page

this goal should be put ahead of everything else. It's time to slaughter a few sacred cows.

Further, a quality education is far more easily achieved than most people think. It doesn't even require huge changes in a school, however desirable some might be. It won't disturb tenure and seniority; it doesn't demand a reduction in the ratio of administrative personnel to teachers; it doesn't depend on eliminating school boards or insist on parental involvement – useful as that can be to the individual student's outcomes.

It can even allow for "flavor of the month" fads, and custodians who get more for sweeping floors than teachers get for handling a roomful of kids.

What is this great secret? It's the Fifth Freedom. Freedom of Access to Information. And I am primarily concerned about the information the teacher in the classroom has at her/his disposal because that is where learning takes place.

Let me explain it all in three sentences.

1) It is as important for a teacher to measure what students don't know as what they do. (Assessment, not testing.)

2) A teacher needs to know that all learning material is aligned with the curriculum, and, ideally, with each student's needs.

3) A teacher needs to have access to information on teaching materials which makes such alignment possible. (TESS, with information on more than 12,000 educational programs, makes this not only possible but easy.)

All three areas (assessment, alignment, and access) are different forms of educational information. If the educator is denied access to this information or if it doesn't exist, then the quality of education for students is greatly diminished.

At EPIE Institute, we have dedicated the last quarter of a century to solving two of the three information needs by creating the appropriate databases and procedures: IIIR for curriculum analysis and alignment, and TESS to provide easy access to appropriate teaching materials. We maintain a keen interest in assessment, and are working with experts in this area.

This information is necessary not only for teachers; it is equally important to parents and to the students themselves. These days at EPIE we get as many calls and letters from parents wanting information about learning materials as we do from educators. Information must be available to all; and I sometimes despair that schools will ever be able to reform themselves soon enough to help these parents and their children. It may well be that the reform of education must come from outside the immense educational bureaucracy. As James Mecklenburger said recently:

> "The power of technology in this society is mostly outside of school buildings because, for the most part, educators haven't wanted it inside. It's far more developed in living rooms, kids' rooms, libraries and museums.
>
> "Whether that capacity will be harnessed to change schools or schools will become increasingly superfluous in an information rich society remains to be seen.
>
> "The conventional school curriculum—the stuff that schools pride themselves on teaching or striving to teach—is going to be available in electronic form. And the only issue is where people get it."

The Fifth Freedom, as I noted, is Freedom From Ignorance, the Freedom to Access Information. Educators cannot continue to deny themselves this freedom and thus deny it to students. Technology is an irresistible force that inevitably alters society.

The Luddites couldn't stop the Industrial Revolution by smashing knitting machines. The educational establishment cannot stop the Age of Information by ignoring the Fifth Freedom for themselves and for their students. ❑

EPIEgram
The newsletter of systemic change.
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